

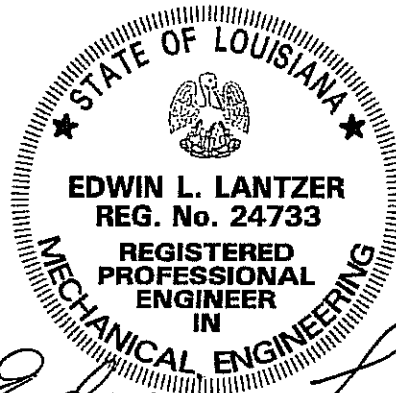
**STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND
DEVELOPMENT**

**CONSTRUCTION PROPOSAL
FOR
CITY OF NEW ORLEANS**



FEDERAL AID PROJECT

**STATE PROJECT NO. 742-36-0008
EARHART BOULEVARD (SEGMENT I)
(HAMILTON ST. TO PINE ST.)
ORLEANS PARISH**



Edwin Lantzer
19 MAY 2009

STATE PROJECT NO. 742-36-0008

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NOTICE TO CONTRACTORS (11/08)

Electronic bids and electronic bid bonds for the following project will be downloaded by the Department of Transportation and Development (DOTD) on **Wednesday, June 17, 2009**. **Paper bids and paper bid bonds will not be accepted.** Electronic bids and electronic bid bonds must be submitted through www.bidx.com prior to the electronic bidding deadline. Beginning at 10:00 a.m., all bids will be downloaded and posted online at <http://www.dotd.la.gov/cgi-bin/construction.asp>. No bids are accepted after 10:00 a.m.

DBE GOAL PROJECT

STATE PROJECT NO. 742-36-0008

FEDERAL AID PROJECT NO. ARR-6033(009)

DESCRIPTION: EARHART BOULEVARD (SEGMENT D) (HAMILTON ST. TO PINE ST.)

PARISH: ORLEANS

LENGTH: 1.015 miles.

TYPE: GRAD, DRAIN STRUC, CLASS II BC, PCCP, PAVEMENT PATCHING, CONCRETE WALKS AND DRIVES, WATER AND SEWAGE, SIGNALIZATION, SIGNS, AND RELATED WORK

LIMITS: State Project No. 742-36-0008: LOC ON EARHART BLVD. FROM ITS JCT WITH HAMILTON ST. to ITS JCT WITH PINE ST.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT FOR: CITY OF NEW ORLEANS (Contracting Agency).

ESTIMATED COST RANGE: \$10,000,000 to \$15,000,000

PROJECT ENGINEER: TO BE DETERMINED

DOTD COORDINATOR: BERGER, FRANCIS; (504) 253-6130.

PROJECT MANAGER: PORTA, BUDDY.

Bids must be prepared and submitted in accordance with Section 102 of the 2006 Louisiana Standard Specifications for Roads and Bridges as amended by the project specifications, and must include all information required by the proposal.

NOTICE TO CONTRACTORS (CONTINUED)

Paper plans and/or proposals may be obtained in Room 101-A of the DOTD Headquarters Administration Building, 1201 Capitol Access Road in Baton Rouge, or by contacting the DOTD; Email: sharonknight@dotd.la.gov, Phone (225) 379-1111, FAX: (225) 379-1714, or by written requests sent to the Louisiana Department of Transportation and Development, Project Control Section, P. O. Box 94245, Baton Rouge, LA 70804-9245. Proposals will not be issued later than 24 hours prior to the time set for opening bids. All Addenda, Amendments, Letters of Clarification, and Withdrawal Notices will be posted online. **Paper notices will not be distributed.** Construction proposal information may be accessed via the Internet at www.dotd.la.gov. From the LA DOTD home page, select the following options: **Doing Business with DOTD**, then **Construction Letting Information**. Once the **Construction Letting Information** page appears, find the **Notice to Contractors** box. From the drop down menu, select the appropriate letting date and press the "Go To" button to open the page, which provides a listing of all projects to be let and a **Construction Proposal Documents** link for each project. All project specific notices are found here. **It will be the responsibility of the bidder to check for updates.** If paper copies of the proposal are desired, the proposal cost is \$25.00. If paper copies of the plans are desired, the cost of the plans is \$26.00 for complete plans. The purchase price for paper plans and proposals is non-refundable. Additionally, plans and specifications may be seen at the Project Engineer's office or in Room 101-A of the DOTD's Headquarters Administration Building in Baton Rouge. Upon request, the Project Engineer will show the work.

All questions concerning the plans shall be submitted via the Electronic Plans Distribution Center known as **Falcon**. Questions submitted within 96 hours of the bid deadline may not be answered prior to bidding. Falcon may be accessed via the Internet at www.dotd.la.gov. From the home page, select **Doing Business with DOTD** from the left-hand menu, then select **Construction Letting Information** on the pop-up menu. On the Construction Letting Information page, select the link, ***DOTD's Plan Room***. Login to Falcon (or request an ID if a first-time user). Once logged in, you will have access to view Project Information, submit a question concerning the project, and view the plans. All submitted questions will be forwarded by email to the Project Manager and the Project Engineer for a response.

The U. S. Department of Transportation (DOT) operates a toll free "Hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should call 1-800-424-9071. All information will be treated confidentially and caller anonymity will be respected.

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GENERAL BIDDING REQUIREMENTS (08/06): The specifications, contract and bonds governing the construction of the work are the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, together with any supplementary specifications and special provisions attached to this proposal.

Bids shall be prepared and submitted in accordance with Section 102 of the Standard Specifications.

The plans herein referred to are the plans approved and marked with the project number, route and Parish, together with all standard or special designs that may be included in such plans. The bidder declares that the only parties interested in this proposal as principals are those named herein; that this proposal is made without collusion or combination of any kind with any other person, firm, association, or corporation, or any member or officer thereof; that careful examination has been made of the site of the proposed work, the plans, Standard Specifications, supplementary specifications and special provisions above mentioned, and the form of contract and payment, performance, and retainage bond; that the bidder agrees, if this proposal is accepted, to provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all material specified in the contract, in the manner and time therein prescribed and in accordance with the requirements therein set forth; and agrees to accept as full compensation therefore, the amount of the summation of the products of the quantities of work and material incorporated in the completed project, as determined by the engineer, multiplied by the respective unit prices herein bid.

It is understood by the bidder that the quantities given in this proposal are a fair approximation of the amount of work to be done and that the sum of the products of the approximate quantities multiplied by the respective unit prices bid shall constitute gross sum bid, which sum shall be used in comparison of bids and awarding of the contract.

The bidder further agrees to perform all extra and force account work that may be required on the basis provided in the specifications.

The bidder further agrees that within 15 calendar days after the contract has been transmitted to him, he will execute the contract and furnish the Department satisfactory surety bonds.

If this proposal is accepted and the bidder fails to execute the contract and furnish bonds as above provided, the proposal guaranty shall become the property of the Department; otherwise, said proposal guaranty will be returned to the bidder; all in accordance with Subsection 103.04.

MANDATORY ELECTRONIC BIDS AND ELECTRONIC BID BONDS SUBMISSION (10/08): This project requires mandatory electronic bidding. All Specifications, whether Standard, Supplemental or Special Provisions, are hereby amended to delete any references regarding paper bids and the ability to submit paper bid forms.

The contractor shall register online to be placed on the Louisiana Department of Transportation and Development (LA DOTD) prospective bidders list or for information only list.

Modifications to proposal documents will be posted on the Department's website at the following URL address: www.dotd.la.gov/cgi-bin/construction.asp.

LA DOTD shall not be responsible if the bidder cannot complete and submit a bid due to failure or incomplete delivery of the files submitted via the internet.

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DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS (02/07):

This project is a DBE goal project. In accordance with the Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts elsewhere herein, the DBE goal for approved subcontracting work on this project is 15.0 percent of the total contract bid price. The contractor shall submit DOTD Form OMF-1A (Request to Sublet) and have it approved by the Department before any subcontract work is done on the project. Only those businesses certified by the Department as Disadvantaged Business Enterprises (DBEs) may be utilized in fulfillment of the DBE goal requirement. Such businesses are those certified by the Louisiana Unified Certification Program on the basis of ownership and control by persons found to be socially and economically disadvantaged in accordance with Section 8(a) of the Small Business Act, as amended and Title 49, Code of Federal Regulations, Part 26 (49 CFR 26).

PARTICIPATION IN JOB TRAINING (07/08): If the contractor desires to participate in job training, as provided by Supplemental Specifications elsewhere herein, he/she shall submit a written request to the project engineer with a copy to the Compliance Program Section. According to the design formula, the number of potential trainees has been established as four. For the purposes of reimbursement, this number of trainees has been translated into an estimated four thousand trainee hours. The pay item for Trainee Reimbursement; will be established in the contract in accordance with the Supplemental Specifications for On-The-Job Training and the above hours.

Should the design formula not indicate that the contract could support training; a contractor may still train upon the approval of the Department.

BUY AMERICA PROVISIONS (03/95): Pursuant to the "Buy America Provisions" of the Surface Transportation Assistance Act (STAA) of 1982 as promulgated by current FHWA regulation 23 CFR 635.410 and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) amendment to (STAA), all steel and iron materials permanently installed on this project shall be manufactured, including application of a coating, in the United States, unless a waiver of these provisions is granted. Coating includes all processes which protect or enhance the value of the material to which the coating is applied. The request for waiver must be presented in writing to the Department by the contractor. Such waiver may be granted if it is determined that:

(1) The application of Buy America Provisions would be inconsistent with the public interest or

(2) Such materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.

Minimal use of foreign steel and iron materials will be allowed without waiver provided the cost of these materials does not exceed 0.1 percent of the total contract cost or \$2,500, whichever is greater; however, the contractor shall make written request to the DOTD Construction Engineering Administrator for permission to use such foreign materials and shall furnish a listing of the materials, their monetary value, and their origin and place of production.

The burden of proof for the origin and place of production and any request for waiver is the responsibility of the contractor.

Prior to the use of steel and iron materials in the project, the contractor shall furnish Mill Test Reports to the engineer for such steel and iron materials, accompanied by a notarized certification stating that the Mill Test Reports represent the steel and iron materials to be furnished and that such materials were produced and fabricated in the United States.

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Pig iron and processed, pelletized, and reduced iron ore are exempt from the Buy America Provisions.

DEFINITIONS AND TERMS (07/07): Subsection 101.03 of the Standard Specifications is amended to include the following.

Contracting Agency. A city, levee board, police jury or other governing authority of a parish, state office, agency, board, commission, public corporation or other political subdivision of the State, in whose name the contract will be executed. Whenever the term "Department" is used as Owner, it shall mean the Contracting Agency. Whenever the term "Department" is used as Engineer, it shall mean the Engineer.

Technical Specifications. Requirements pertaining to a specific method of performing the work and to quantities and qualities of materials to be furnished.

The definition for "Proposal/ Bid Guaranty" is deleted and following substituted.

Proposal/Bid Guaranty. The required security furnished with a bid. The only form of security acceptable is a Bid Bond.

COST-PLUS-TIME BIDDING PROCEDURE (A + B METHOD)(08/06): The 2006 Standard Specifications and Supplemental Specifications, as amended elsewhere herein, are further amended as follows:

General. The process for bidding and the award of this project will take into account not only the contract amount bid but also the bidder's stated contract time in which the project will be completed to final acceptance. This method will only be used to determine the successful bidder. It will not be used to determine the award amount nor final payment to the contractor.

Definition of Terms. For this project the following definitions apply:

- (a) Calendar Day – Refer to Subsection 101.03.
- (b) Contract Amount – The summation of the products of the quantities shown in the Schedule of Items multiplied by the unit bid prices.
- (c) Contract Time – The number of calendar days stated in the successful bidders proposal to complete the project to final acceptance as adjusted by authorized extensions.
- (d) Daily Road User Cost – The amount which represents the average daily cost of interference and inconvenience to the road user. The Department has assigned a daily road user cost of \$5000 per calendar day for this project.
- (e) Final Acceptance – Refer to Subsection 105.17(b).

Preparation of Proposal. In addition to all other bidding requirements of the project specifications, the bidder shall state his required completion time in the space provided on the "CONTRACT TIME" form contained elsewhere herein. The proposed completion time shall be based on the construction phases shown in the plans in their respective order and will be a factor used in considering bids for award. The stated number of calendar days required for completion will be the contract time for this project should the bidder be successful. The total number of days stated by the bidder to complete the project shall not exceed the maximum allowable contract time stated on the "CONTRACT TIME" form contained elsewhere herein. Bids not including a contract time, or showing time to completion in excess of the maximum amount will be considered irregular and will be rejected.

Consideration of Bids. After bids are opened and read, they will be compared based on the Total Bid Amount as determined by the following formula. In case of equal total bid

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amounts between qualified bidders, award will be made to the bidder proposing the lowest contract time.

Total Bid Amount = A + B

Where:

A = the contract amount as defined herein.

B = the product of the number of calendar days of contract time stated by the bidder and the daily road user cost contained herein.

Conditional Notice to Proceed/Notice to Proceed. If this A + B project is awarded during the months of September, October or November, the Department will consider issuing a Conditional Notice to Proceed with an expiration date of March 1 of the following calendar year, whereupon a Notice to Proceed will become effective. Such request for delay from the contractor shall be in writing with justification for the delay. If a Conditional Notice to Proceed is issued then any assembly period, as provided in the special provision "Contract Time", is negated.

Late Completion. Should the contractor fail to complete the project to final acceptance prior to expiration of the contract time, stipulated damages will be charged an amount equal to the daily road user cost stated herein.

INTENT OF CONTRACT (11/95): Subsection 104.01, Intent of Contract, is amended to include the following.

(a) Covenant of Good Faith and Fair Dealing.

This contract imposes an obligation of good faith and fair dealing in its performance and enforcement.

The contractor and the Department agree from the beginning to focus on creative cooperation, to avoid adverse confrontation, and to foster mutual respect, along with a positive commitment to honesty and integrity, and agree to the following mutual duties.

(1) Each will function within the laws and statutes applicable to their duties and responsibilities.

(2) Each will communicate in an open and candid manner.

(3) Each will assist in the other's performance.

(4) Each will avoid hindering the other's performance.

(5) Each will proceed to fulfill its obligations diligently.

(6) Each will cooperate in the common endeavor of the contract.

(b) Voluntary Partnering.

The Louisiana Department of Transportation and Development intends to encourage the foundation of a cohesive partnership with the contractor and its principal subcontractors and suppliers. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objective is a cooperative approach to contract management that will reduce costs, litigation, and "stress" while completing the project in accordance with the plans and specifications.

This partnership will be bilateral in makeup, and participation in partnering will be totally voluntary and is not a requirement of the contract.

A partnering conference is to be implemented and held prior to beginning construction. The contractor's management personnel and the Project Engineer will initiate a partnering development conference. They, working with the assistance of the District Construction Engineer, will make arrangements to determine the facilitator, the attendees at the conference,

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agenda of the conference, duration, and location. Persons required to be in attendance will be the Project Engineer and key project personnel; the contractor's on-site project manager and key project supervision personnel of both the prime and principal subcontractors and suppliers. The project design engineers, FHWA, key company representatives, and key local government personnel will also be invited to attend as necessary. The contractor and DOTD will also be required to have Regional/District and Corporate/State level managers on the project team.

Any cost associated with effectuating this partnering will be agreed to by both parties and will be shared equally and will be paid for in accordance with Subsection 109.04. The contractor, DOTD, FHWA and all others invited to the partnering conference will be responsible for any expenses incurred by their respective employees which includes salaries, travel, and lodging.

Follow-up conferences may be held periodically throughout the duration of the contract as agreed by the contractor and the DOTD.

The establishment of a partnership charter on a project will not change the legal relationship of the parties to the contract nor relieve either party from any of the terms of the contract. This partnership charter is intended only to establish an environment of cooperation and communication between all parties involved with the completion of the project.

MAINTENANCE OF TRAFFIC (11/13/08): Subsection 104.03 of the 2006 Standard Specifications is amended to include the following requirements.

The contractor shall provide for and maintain through and local traffic at all times and shall conduct his operations in such manner as to cause the least possible interference with traffic at junctions with roads, streets and driveways.

In order to maintain traffic, the contractor shall construct temporary detours as required by the contract.

The contractor shall conduct his paving operations on one side of the roadway at a time. The side of the roadway, including shoulder, which is open to traffic, shall be clear at all times.

When the plans show asphaltic concrete pavement layers to be placed in thicknesses of 2 inches (50 mm) or less, the contractor will be permitted to pave in one lane for a full day; the adjacent lane may be paved the following workday. When pavement layers are greater than 2 inches (50 mm) thickness, the contractor shall use a Wedged Joint and will be permitted to pave in one lane for a full day; the adjacent lane shall be paved the following day or place approximately 1/2 of each day's production in one lane and the remainder in the adjacent lane.

At the end of each day's paving operations, temporary pavement markings shall be in place and proper signs and barricades displayed. During the period that all lanes are open to traffic, the contractor shall neither store material nor park equipment on roadway shoulders.

All asphaltic concrete pavement new construction, overlays, and shoulder surfacing operations open to traffic shall be conducted in accordance with the following requirements.

1. **Shoulder Subgrade Preparation:** Any required embankment widening shall be completed before placement of the asphaltic concrete overlay. All vegetation shall be removed from existing shoulders before beginning temporary or final shoulder construction. When the Shoulder Wedge is required, the contractor shall blade and shape existing shoulder material to form a uniform surface under the wedge prior to placement of the asphaltic concrete overlay.

2. **Temporary Shoulder Construction:** Temporary shoulder construction described herein shall be completed at the end of each day's operations for all asphaltic concrete courses except the final wearing course. There shall be no drop-off from the pavement edge to the shoulder.

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The contractor shall blade and shape existing shoulder material against, and approximately level with, the top of the pavement surfacing to form a temporary shoulder with a uniform slope from the pavement edge to the existing shoulder line, or to a point 10 feet (3 m) from the pavement edge. If existing shoulder materials are insufficient, the contractor shall furnish, place and shape additional shoulder surfacing materials to form the temporary shoulder. Existing and/or additional materials for temporary shoulders shall be to the satisfaction of the engineer. Compaction shall be by approved methods.

No direct payment will be made for constructing and subsequently reshaping temporary shoulders, except payment for additional materials under appropriate pay items.

PERMITS, LICENSES, TAXES AND INSURANCE (04/01). Section 107 of the Standard Specifications is amended as follows.

Subsection 107.02, Permits, Licenses, Taxes and Insurance. This subsection is deleted and the following substituted.

107.02 PERMITS, LICENSES, TAXES AND INSURANCE. Contractors shall procure temporary permits and licenses for the work, pay charges, fees, and taxes, and give notices necessary to due and lawful prosecution of the work.

The contractor shall maintain, at a minimum, the following insurance coverages:

(a) Workers Compensation in compliance with state law, with the exception that the contractor's Employer liability is to be at least \$1,000,000 when work is to be over water and involves maritime exposures. For the coverage provided in this subpart the contractor's Insurer will have no right of recovery or subrogation against the State of Louisiana, the Louisiana Department of Transportation and Development, or **City of New Orleans**.

(b) Commercial General Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. The aggregate loss limit must be on a per project basis. This insurance shall include coverage for bodily injury and property damage, and include coverage for Premises-Operation; Broad form Contractual Liability; Products and Completed Operation; Use of Contractors and Subcontractors; Personal Injury; Broad form Property Damage; explosion, collapse and underground (XCU) coverage. The required combined single limit amount of insurance shall be as provided in Table 107-1.

(c) A separate Owner's and Contractor's Protective (OCP) Liability Policy shall be supplied by the contractor naming the Louisiana Department of Transportation and Development and **City of New Orleans** as the named insured. The required combined single OCP limit amount shall be as provided in Table 107-1.

(d) Business Automobile Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. This insurance shall include bodily injury and property damage coverage for owned automobiles, hired automobiles and non-owned automobiles. The required combined single limit amount of insurance shall be as provided in Table 107-1 below.

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**TABLE 107-1
Insurance Requirements**

<u>INITIAL CONTRACT AMOUNT</u>	<u>MINIMUM INSURANCE</u>
Up to \$1,000,000	\$ 1,000,000
From \$1,000,001 to \$2,000,000	\$ 2,000,000
Over \$2,000,000	\$ 5,000,000

The following shall be included as provisions in each policy:

(a) The insurance company (ies) issuing the policy (ies) shall have no recourse against the State of Louisiana, the Department of Transportation and Development, or **City of New Orleans** for payment of any premiums or for assessments under any form of the policy.

(b) Any and all deductibles in the above described insurance policy (ies) shall be assumed by and be at the sole risk of the contractor.

Insurance is to be placed with insurance companies authorized in the State of Louisiana with an A. M. Best's rating of A-: VI or higher. This rating requirement may be waived for Workers Compensation coverage only.

Should any policies be canceled, the contractor shall immediately notify the Department of Transportation and Development and **City of New Orleans**.

Upon failure of the contractor to furnish, deliver and maintain such insurance as required, this contract, at the election of **City of New Orleans**, may be immediately declared suspended, discontinued or terminated. Failure of the contractor to maintain any required insurance shall not relieve the contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligations of the contractor concerning indemnification under Subsection 107.17.

The contractor is responsible for requiring and verifying that all subcontractors working on the project maintain appropriate types and levels of insurance coverage.

AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA) (SEC107): Subsection 107.05, Federal Aid Participation as amended by the supplemental specifications is further amended to include the following:

This project is funded through the American Recovery and Reinvestment Act of 2009 (ARRA). The ARRA requires the contractor and all subcontractors to properly complete and submit monthly Employment Data Reports for ARRA funded projects. The *Monthly Employment Report Form* (Form No. FHWA-1589) and the instructions necessary for proper completion of the form are included as a supplement to the Federal Aid Contract provisions as contained elsewhere herein, and are also available on the DOTD Construction, and ARRA websites. The contractor shall ensure that all subcontractors are aware of these reporting requirements and shall include these requirements within each subcontract. **DOTD reserves the right to withhold estimated payments to the contractor for the contractor's or any subcontractor's refusal to report or for frequent occurrences of untimely, missing, incomplete, or inaccurate employment reporting on this ARRA project.**

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PUBLIC CONVENIENCE AND SAFETY (09/05): Subsection 107.07 of the Standard Specifications is amended to include the following.

The procurement of police officers for public safety during construction shall be in accordance with the Department's Policy for Use of Police Officers in Construction/Maintenance Work Zones. The DOTD project engineer shall determine the need for police officers to assist in controlling traffic in a particular work zone. The number of officers needed, the tasks they will perform, and their location within the work zone will vary as a function of the zone type. Police officers shall be placed at strategic locations at times during construction as determined by the DOTD project engineer.

The three types of law enforcement services are Police Presence, Police Enforcement and Police Traffic Control. Police Presence is defined as the use of police officers at the beginning of the active work zone area utilizing their blue lights to gain the attention of drivers. Police Enforcement is utilized when enforcement is required to enhance the safe operation of the work zone. Police Traffic Control is to be used in detour / diversion situations.

The DOTD project engineer will extend an invitation to the appropriate Louisiana State Police (LSP) Troop Commander to attend the pre-construction conference.

Prior to commencing the work on the project, the contractor shall contact the LSP Troop Commander to obtain law enforcement services of police officers during construction. If the LSP Troop is unable to provide law enforcement services for the project work zone, the LSP Troop Commander or the contractor will extend the invitation to the appropriate local law enforcement authorities.

Police officers will report directly to the contractor. However, the contractor will not have the authority to direct the placement of the police officer or the patrol vehicle in situations that are contrary to established procedures and/or could endanger the police officer. The DOTD project engineer will make the final determination on all issues regarding police officer responsibility in work zones.

Prior to the beginning of the shift, the contractor shall provide a daily work zone briefing to the police officer. For major changes in traffic patterns, advanced notification shall be provided to the police agency working the detail. This information should also be provided to the motoring public through the DOTD district and / or the LSP Troop.

The contractor shall pay for law enforcement services provided by the police officers based on the hourly wage and vehicle rate fee schedule below. The Department will reimburse the contractor monthly for the incurred cost. The contractor shall furnish time record documentation with the request for reimbursement. The provisions of Subsection 109.04 shall not apply to this reimbursement.

The agreed upon fee schedule for police officers in the work zone is as follows:

\$25 per vehicle per day - vehicle use fee

\$40 per hour per officer (one officer per vehicle) (minimum 2 hours).

SUBLETTING OF CONTRACT (01/83): In accordance with Subsection 108.01 of the Standard Specifications, the following items are designated as "Specialty Items":

Item 705-09, Rebuilt Fence

Item 729-01, Sign (Type A)

Item 731-02, Reflectorized Raised Pavement Markers

Item 732-01-B, Plastic Pavement Striping (6" Width)

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Item 732-01-C, Plastic Pavement Striping (8" Width)
Item 732-01-E, Plastic Pavement Striping (24" width)
Item 732-02-A, Plastic Pavement Striping (Solid Line) (4" Width)
Item 732-03-A-01, Plastic Pavement Striping (Broken Line) (4" Width) Preformed Marking Tape Type V
Item 732-04-A, Plastic Pavement Legends & Symbols (Arrow)
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Item 732-04-C, Plastic Pavement Legends & Symbols (Only)
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Item S-136, Conduit 1" (Rigid)
Item S-137, Underground Junction Box (Type D)
Item S-138, Underground Junction Box (Type F)
Item S-139, Traffic Manhole
Item S-140, Loop Detectors (Saw Loop Slot in Pavement)
Item S-141, Cable Loop Lead In
Item S-142, Optical Emitter
Item S-143, Conductor, 3C (Signal, #14 AWG Stranded) Optical Detector Cable

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Item S-144, Uni-Directional Optical Detectors
Item S-146, Conductor, 1-6PR Interconnect Cable
Item S-148, Street Name Signs (On New Post)
Item S-149, Conductor, 2C/OS (Loop Lead-In, #14 AWG Stranded) Loop Wire
Item S-150, Impact Attenuator
Item S-151, Police Traffic Control
Item S-152, Conduit 2" PVC Jack and Bore
Item S-153, Conduit 4" PVC Jack and Bore
Item S-154, Trenching and Backfilling
Item S-155, Signs (R3-1)
Item S-156, Signs (R3-2)
Item S-157, Signs (R3-5R)
Item S-158, Signs (R3-7R)
Item S-159, Signs (R5-1)
Item S-160, Signs (R10-10)
Item S-161, Signs (Special, Yield to Pedestrians)
Item S-162, Signs (Special, Street Name)
Item S-163, Conductor, 3C (Power, #6 AWG)
Item S-201, Sewage and Water Board Electrical Ductbank and Manholes, Complete
Item S-202, Drain House Connection From New Drain Line to Back of Curb (6" PVC)
Item S-203, Drain House Connection Beyond Back of Curb (6" PVC)
Item S-204, Collector Line to Catch Basin for Drain House Connections (8" PVC)
Item S-205, Adjust Drain Cleanout Box
Item S-206, Remove Mud and Debris from Meter Box
Item S-207, Replace Broken Water Meter Box
Item S-208, Adjust Water Meter Box
Item S-209, Sewer Point Repair Up to Ten Feet
Item S-210, Sewer Point Repair Beyond Ten Feet
Item S-211, Remove and Replace Existing Sewer House Connection From New Main to Back of Curb
Item S-212, Remove and Replace Sewer House Connection Beyond Back of Curb
Item S-213, Replace 5/8" and 3/4" Water House Connection (From Main to Meter)
Item S-214, Replace 1" Water House Connection (From Main to Meter)
Item S-215, Replace 3/4" or 1" Water House Connection (From Meter to Property Line)
Item S-301, Tree Removal (Up to 10.0" DBH)
Item S-302, Tree Removal (10.1" DBH to 20.0" DBH)
Item S-303, Tree Trimming
Item S-304, Root Pruning
Item S-305, Root Trenching
Item S-306, Restoration of Existing Plant and Flower Beds

CRITICAL PATH METHOD (CPM) FOR CONSTRUCTION PROGRESS SCHEDULING (12/08): Critical Path Methods (CPM) as described and with terms as defined in the Associated General Contractors of America (AGC) publication, *Construction Planning and Scheduling*, latest edition, shall be used in construction scheduling, establishing the critical

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items of work, and measuring progress of the work. In case of discrepancy between these specifications and *Construction Planning and Scheduling*, these specifications shall govern.

Section 108, Prosecution and Progress of the 2006 Standard Specifications and the Supplemental Specifications thereto is amended as follows.

Subsection 108.03, Construction Progress Schedule: This subsection is deleted and the following substituted.

The contractor shall submit to the project engineer for approval, CPM Construction Schedules, Summary of Activities tabulations, and Scheduled Earnings tabulations, all as described hereinafter, and altogether defined as "Construction Progress Schedule" or "Construction Schedule". The Construction Progress Schedule shall be based on the planned and specified finished work, the maintenance of traffic restrictions, and other design requirements given in the plans and specifications. Each sheet or page of each submittal shall be identified with the contractor's company name, state project number, project name, date prepared, revision dates, and sheet or page number. If the submittals are not prepared by the contractor's own staff, the company name of the preparer shall be shown on each sheet or page.

The critical activities as shown on the approved Construction Schedule will be considered in establishing the controlling item of work. If the Construction Schedule has not been approved, the engineer will establish the controlling work item and charge the contract time accordingly. Scheduled Earnings will be the basis for measurement of contractor's progress.

Approved Construction Progress Schedules and approved associated data shall become part of the contract documents. Un-approved Construction Progress Schedules and associated data shall not be considered relevant or applicable for any purposes during or after completion of the project and shall not be binding on the Department. The sequence of work as represented on the Construction Progress Schedule and subsequent updates shall be interpreted as being the intention of the contractor at the time that the schedule was made.

(a) Construction Schedule: The Construction Schedule shall be a Critical Path Method (CPM) graphic diagram, computer prepared, utilizing the Precedence Diagramming Method (PDM). For the calendar day contract, the Gregorian calendar shall be used.

The schedule shall show and describe the various activities of work required to complete the contract in sufficient detail so that all activities are readily identifiable and progress on the activities can be readily measured. Sufficient detail in bridge work means each element of work (piles, footings, columns, caps, rebar, cure time, etc.) of individual bents; each element of work in individual spans (girders, strip seal joints, Class AA, rebar, cure time, etc.); individual approach slabs; railings; rebar for all of the above as separate activities; and, miscellaneous other bridge work. Sufficient detail in road work means individual runs of pipe in drainage structures; individual box culverts; individual detour roads; the embankment, excavation, base and paving layers within definable geometric limits (e.g., from station to station, within a single ramp, etc.). Physical locations of activities within definable geometric limits (e.g., from station to station, within a single ramp, individual bents, individual spans, etc.) shall be included in the activity description or shown in activity codes relative to each activity. It shall include submittals and approvals of critical samples, shop drawings, procedures, order lists (pilings for example), or other things that could have a significant schedule impact.

Relatively minor items of work, similar or non-similar, may be grouped together into one activity (or more). Activities to be performed by subcontractors shall be included and identified.

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The schedule shall show the sequence in which the activities are to be accomplished and their dependency relationships. The estimated contract earnings and pay item quantities associated with each activity shall be included, and the sum of the estimated earnings shall equal the current contract amount.

The duration of activities shall be in whole calendar days and no activity shall have duration of less than one calendar day or more than 30 calendar days. The ending event of the schedule shall be a finish milestone identified as "Contract Completion Date". Its sole predecessor shall be "Reserved Float". The sole predecessor of "Reserved Float" shall be "Final Inspection" which shall be a finish milestone and shall have as predecessors all of the activities that must be completed prior to the Department's final inspection of the work. The duration of "Reserved Float" is the difference between "Final Inspection" and "Contract Completion Date". "Reserved Float" is defined as that part of the shared float reserved exclusively for the contractor's use. The contract date for stipulated damages will be adjusted by change order to the beginning date of the activity "Reserved Float".

The Construction Schedule shall be computer plotted on sheets not larger than 22 inches x 36 inches and shall show a continuous flow of information from left to right with no arrows from right to left and shall be drawn to a time scale of calendar days. The critical path shall be clearly identified. Resource constraints shall be identified, as shall scheduled starts or completions imposed on the schedule by the contractor.

The contractor shall submit color-coded graphics in the required multiple copies. The choice of the color coding must remain in effect for the life of the contract.

The contractor shall provide the Department with the means to electronically translate the Construction Schedule data into a configuration that can be read and processed by the Department or its consultants' hardware and Primavera software. If the contractor elects to use SureTrak Project Manager software, the following defaults must be placed: (1) resources shall be non-driving; (2) default activity type shall be "Task"; (3) activity type shall not be "Independent"; (4) duration display style shall be "Day (d)"; (5) float style shall be "Days"; and, (6) dates time format shall be "Don't show time". The revenue feature in SureTrak Project Manager does not translate to Primavera Project Planner (P3), so in SureTrak Project Manager the earnings must be entered as cost data. In both the SureTrak Project Manager and in the Primavera Project Planner (P3) "Back up" menu selection, the contractor will ensure that the option "Remove access list during backup" is checked. In addition, the project must be saved in SureTrak as a "Concentric P3" Type project.

(b) Summary of Activities: The Summary of Activities shall be a tabulation of all activities shown on the Construction Schedule, and shall accurately reflect the data used in preparation of the Construction Schedule. The summary shall be computer generated and sequenced by activity number. Each activity shall include as a minimum the following, in calendar days:

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1. Activity numbers.
2. Activity description.
3. Estimated duration of activity.
4. Early start.
5. Late start.
6. Constrained start, if constrained.
7. Early finish.
8. Late finish.
9. Constrained finish, if constrained.
10. Status (whether critical).
11. Free float.
12. Total float.
13. Monetary value of the activity.
14. Remaining duration and calendar days used.

(c) **Scheduled Earnings:** The Scheduled Earnings shall be a product of the software creating the Construction Schedule and shall be a tabulation of accumulated scheduled contract earnings, based on late starts, measured in accumulated dollars for all activities, for each monthly partial estimate. The tabulation shall be prepared from the Construction Schedule and shall be computer generated. The Schedule of Earnings will not include advanced payments for stockpiled materials.

(d) **Cash Management Document:** When designated as a Cash Management Project, prior to the issuance of the Notice to Proceed, the contractor shall provide to the Department and obtain approval from the Department of the Scheduled Earnings report as described above, except that it shall be based on early starts. The Department will use this report for its cash management purposes. Failure of the contractor to provide and obtain approval of the Scheduled Earnings Report will result in withholding of any funds due the contractor.

(e) **Submittal:** Prior to or at the preconstruction conference the contractor shall submit to the project engineer for approval, in triplicate, a Construction Schedule giving a proposed schedule of operations that provides for completion of the work, a Summary of Activities tabulation, a Scheduled Earnings tabulation, and a Forty-Five Day Look-Ahead task list. The contractor shall also submit the Construction Schedule data electronically capable of being processed with the hardware and software being used by the Department or its consultants.

Within 7 calendar days after receipt of the submittal, the project engineer and contractor shall meet and review the proposed schedules and tabulations. Any revisions resulting from the review shall be submitted, in triplicate, for approval within 7 calendar days after the meeting. This procedure will be repeated as necessary. The approved final schedule shall be called the "Baseline Schedule".

Failure to have obtained approval of a Baseline Schedule and tabulations within 20 calendar days after the Notice to Proceed will result in withholding twenty-five percent of the amount of partial estimates until such schedules and tabulations are submitted and approved. Failure to have obtained approval of a Baseline Schedule and tabulations within the third estimate period may result in the Department's determination that the contractor is in default under the provisions of Subsection 108.09.

(f) **Construction Schedule Updates:** The contractor shall update and submit each month, within 7 calendar days after the partial estimate is submitted, the Construction Schedule critical

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path diagram, Summary of Activities tabulation, Scheduled Earnings tabulation, a Forty-Five Day Look-Ahead task list, and a current Turnaround Document as follows:

- (1) The updated Construction Schedule critical path diagram will be in the same form as that submitted in (e) Submittal. It will be updated for progress through the estimate closing date, recalculated and plotted. The contractor will revise, adjust, and recalculate the schedule so that the difference in the work completion date calculated by the Retained Logic Method shall not be more than one-half an estimate period different from the work completion date calculated by the Progress Override Method. The Construction Schedule critical path diagram will show both the look ahead critical path for the duration of the project and the look back critical path as reported in the prior months.
- (2) The updated Summary of Activities and Scheduled Earnings tabulation will be in the same form as that submitted in (e) Submittal. It will be updated for progress through the estimate closing date, recalculated and printed.
- (3) The Forty-Five Day Look-Ahead task list will show all incomplete activities which the logic has determined either should be or may be active during the next forty-five days. It will be plotted in a graphic form similar to that of the Construction Schedule critical path diagram.
- (4) The Turnaround Document will be a listing of the log record of a new activity added monthly to the schedule for the purpose of keeping a current presentation of the following information:
 - a. The original contract completion date presented as actual calendar date.
 - b. The number of days added to the contract by approved change order (if any, if none, so state).
 - c. The present computed completion date presented as an actual calendar date and as a workday number, if applicable.
 - d. A list of activities deleted and added (if any, if none, so state), including their descriptions.
 - e. A list of logic changes and the reasons for the changes (if any, if none, so state).
 - f. A list of budget changes and the reasons for the changes (if any, if none, so state).
 - g. A narrative description of any other changes to the Construction Schedule critical path diagram.

Failure to submit the monthly updates of the Construction Progress Schedules within 7 calendar days after the partial estimate was submitted will result in withholding of twenty-five percent of the amount of partial estimate payments until such schedules are submitted and approved. Failure to have obtained approval of three consecutive monthly updates of the Construction Progress Schedule may result in the Department's determination that the contractor is in default under the provisions of Subsection 108.09.

(g) CPM Reviews: The project engineer will designate the time and location for review of construction progress. The contractor's representative designated under Subsection 105.05 will be required to attend the construction progress review or a contractor's representative directed by the project engineer shall attend. The current approved Construction Schedule, Summary of Activities and Scheduled Earnings tabulations shall be reviewed, and required or desired changes discussed and documented.

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As a minimum the following shall be discussed: contractor's compliance with approved schedules and tabulations, delays, proposed and approved contract quantity increases and decreases, proposed and approved extra work, actual starts, durations and finishes, and actual contract earnings.

If requested by the project engineer, within 7 calendar days following the review meeting the contractor shall submit to the project engineer for approval, in triplicate, a revised Construction Schedule, Summary of Activities tabulation, and Scheduled Earnings tabulation, and Forty-Five Day Look-Ahead, all in accordance with paragraph (e) Submittal, and all brought up to date to reflect agreements made at the review meeting. Failure to submit the revision of the Construction Progress Schedules within 7 calendar days after the request will result in withholding of twenty-five percent of the amount of partial estimate payments until such schedules are submitted and approved. Failure to have obtained approval of three consecutive monthly updates of the Construction Progress Schedule may result in the Department's determination that the contractor is in default under the provisions of Subsection 108.09.

(h) The CPM Construction Schedule will be provided at no direct pay.

Subsection 108.04, Prosecution of Work: Heading (b), Disqualification, is deleted and the following is substituted.

(b) Disqualification. The contractor's progress will be determined monthly at the time of each partial estimate, and will be based on the total amount of money earned by the contractor, excluding advanced stockpiled material, as shown by the partial estimate compared to scheduled earnings as shown by the approved Scheduled Earnings tabulation, as of the end of the partial estimate period. If the contractor's progress is more than 10 percent behind scheduled earnings, the contractor may be notified that he is not prosecuting the work in an acceptable manner. If requested by the Department, the contractor must meet with and provide the project engineer with an acceptable written plan which details how the contractor will re-gain lost progress and prosecute remaining work. If the contractor's progress is more than 20 percent behind the elapsed contract time, the contractor and the surety will be notified that he is not prosecuting the work in an acceptable manner. The contractor must meet with and provide the project engineer with an acceptable written plan which details how the contractor will re-gain lost progress and prosecute remaining work.

A contractor who is in default in accordance with Subsection 108.09 (a) (1) and actual earnings versus scheduled earnings are 5.0 percent or more, the contractor shall be immediately disqualified. The contractor shall remain disqualified until the project has received a final inspection and has been recommended for final acceptance. Should the surety or the Department take over prosecution of the work, the contractor shall remain disqualified for a period of one year from the completion of the project, unless debarment proceedings are instituted.

During the period of disqualification, the contractor will not be permitted to bid on contracts nor be approved as a subcontractor on contracts. Any bid submitted by the contractor during the period of disqualification will be considered irregular.

Subsection 108.07, Determination and Extension of Contract Time: This subsection is amended as follows.

The third and fourth paragraphs are deleted and the following substituted.

The contract time for the work as awarded is based on the original quantities as defined in Subsection 102.05 and includes time to procure material, equipment and an adequate labor force to complete the work. If satisfactory fulfillment of the contract requires performance of work in

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greater quantities than those specified, or requires performance of extra work in accordance with Subsection 104.02 and the contractor requests additional contract time, the contractor shall submit a proposed CPM schedule based on the latest approved CPM schedule showing the increased time and revised completion date for approval by the Department. When the contract is altered in accordance with Subsection 104.02 and the engineer determines that a reduction in contract time is warranted due to decreased effort, the contractor shall submit a proposed CPM schedule based on the latest approved CPM schedule showing the reduced time and revised completion date for approval by the Department. A CPM schedule will be required for the engineer to process a change order that either increases or decreases the contract time.

If the contractor finds it impossible, for reasons beyond the contractor's control, to complete the work within the contract time as specified or as extended in accordance with the provisions of this subsection, the contractor shall, at the time the delay occurs make a written request to the engineer for an extension of time setting forth therein the reasons which justify granting the request. Such written request shall conform to the requirements of EDSM III.1.1.28. If the request does not so conform, the contractor hereby agrees to and shall be deemed to have expressly waived any claim for such additional time. The contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the engineer finds that the work was delayed because of conditions beyond the control and without the fault of the contractor, the engineer may extend the contract time in such amount as conditions justify. The contractor's written request to the engineer for an extension of contract time shall include a proposed CPM schedule based on the latest approved CPM schedule update showing the increased time and revised completion date for approval by the Department. This CPM schedule document will be required for the engineer to process a change order that changes the contract time.

DETERMINATION AND EXTENSION OF CONTRACT TIME (12/08): Subsection 108.07, Determination and Extension of Contract Time, is amended to include the following.

The contractor shall document for each month of scheduled construction, the occurrence of adverse weather conditions having an impact on controlling items of work. An adverse weather day is a previously scheduled or normally scheduled work day on which rainfall, wet conditions or cold weather will prevent construction operations on the controlling work activity from proceeding for at least 5 continuous hours of the day or 65 percent of the normal work day, whichever is greater, with the normal working force engaged in performing the controlling item of work. If the contractor submits a written request for additional contract time due to adverse weather conditions, the contractor's request will be considered only after the Department agrees with the days and then only for adverse weather days in excess of the allowable number of days per month stated below. Adverse weather days will be documented by the Engineer and agreed upon monthly. Adverse weather days will be prorated for partial months when a work order or final inspection is issued other than the first or last of the month and agreed to by the Department. If the contractor is being considered for disqualification by the Department, an equitable adjustment in contract time may be made at the end of the original contract period, including all days added by approved change orders. Contract time will be adjusted by comparing the actual number of adverse weather days to the statistical number of adverse weather days over the specific time period per the table below. The resulting number of adverse weather days will be multiplied by 1.45 to convert to calendar days. Adjustments for adverse weather cannot result in a contract time reduction. Once adjusted, a new adverse weather day

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accounting will begin using the adverse weather conditions having an impact on the controlling items of work, in excess of the allowable number of days per month stated below. A second and final contract time adjustment will then be done at the final acceptance of the project. An adjustment in the contract time due to adverse weather will not be cause for an adjustment in the contract amount. There will be no direct or indirect cost reimbursement for excess adverse weather days.

The following are anticipated adverse weather days that the contractor shall include in each month of his calendar day construction schedule.

January	10 days	May	5 days	September	4 days
February	9 days	June	6 days	October	3 days
March	8 days	July	6 days	November	7 days
April	7 days	August	5 days	December	7 days

PAYMENT ADJUSTMENT (12/08): Section 109, Measurement and Payment of the 2006 Standard Specifications and the supplemental specifications thereto, is amended to add the following.

This project is designated for payment adjustment for asphalt cements and fuels in accordance with Subsection 109.09 as follows.

109.09 PAYMENT ADJUSTMENT (ASPHALT CEMENTS AND FUELS).

(a) General: Payment for contract items indicated herein will be adjusted to compensate for cost differentials of Performance Graded (PG) asphalt cements, gasoline, and diesel fuel when such costs increase or decrease more than 5 percent from the Department's established base prices for these items. The base price indices for asphalt cements and fuels will be the monthly price indices in effect at the time bids are opened for the project. The base price indices for asphalt cements will be as stated in paragraph (b) below. The base price index for fuels will be as stated in paragraph (c) below.

Payment adjustments will be made each monthly estimate period when a price index for this period varies more than 5 percent from its respective base price index. The monthly price indices to be used with each monthly estimate will be the price indices for the month in which the estimate period begins.

If the project is placed in default, payment adjustments will be based on the monthly price indices used for the last monthly estimate period prior to the project being placed in default, unless a monthly price index decreases in which case the lower monthly price index will be used.

If it is determined after completion of work on any eligible item that the total quantity paid to date must be adjusted to reflect more accurate quantity determinations, the Department will prorate the additional quantity to be added or subtracted over all previous estimate periods in which the item of work was performed in order to determine additional payment adjustments. If payment adjustments were made during any of these partial estimate periods, this added or subtracted quantity that has been prorated will likewise have payment adjustments calculated and included.

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(b) Performance Graded (PG) Asphalt Cements: The base price index will be the monthly price index in effect at the time of bid opening as shown elsewhere herein. The monthly price indices will be the average, excluding the extreme outliers, of the unit prices for PG 64-22, the average, excluding the extreme outliers, of the unit prices for PG 70-22m, and the average, excluding the extreme outliers, of the unit prices for PG 76-22m. The monthly prices for each of these asphalt materials will be F.O.B. refinery or terminal as determined from the quoted prices effective on the first calendar day of each month from suppliers of these materials. Suppliers considered are those who have requested to participate in the liquid asphalt index determination and have supplied materials on DOTD projects within the past twelve months. These suppliers and materials shall be listed on the Department's Qualified Products List (QPL 41) and must be marketed in Louisiana. For Asphalt Cements not listed above, the following shall be considered equivalent for payment adjustments:

Pay Item Equivalents Eligible for Asphalt Pay Adjustment

Performance Graded Asphalt Cement	Equivalent PG Asphalt Cement for Payment Adjustment
PG 58-28	PG 64-22
PG 64-22	PG 64-22
PG 70-22m	PG 70-22m
PG 76-22m	PG 76-22m
PG 82-22rm	PG 64-22

Payment adjustments will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,

$$P_a = (A - 1.05B) \times C \times D \times (1.00 + T)$$

If Base Price Index exceeds Monthly Price Index,

$$P_a = (0.95B - A) \times C \times D \times (1.00 + T)$$

Where:

- P_a = Price adjustment (increase or decrease) for asphalt cement.
 A = Monthly Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.
 B = Base Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.
 C = Tons/megagrams of asphaltic concrete.
 D = Percent of respective asphalt cement, per job mix formula, in decimals.
 T = Louisiana sales tax percentage, in decimals.
(Note: Local tax is not considered)

The engineer will furnish the weights (mass) of asphaltic concrete placed during the monthly estimate period with the respective asphalt cement content, excluding the asphalt content in reclaimed asphaltic pavement (RAP) as per job mix formula. If the asphalt cement content changes during the estimate period, the respective weight (mass) of asphaltic concrete produced at each cement content will be reported.

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All contract pay items using PG 58-28, PG 64-22, PG 70-22m, PG 76-22m, and PG 82-22rm shall be eligible for payment adjustments of asphalt materials; except no payment adjustment will be made for contract pay items under Subsection 510-01, "Pavement Patching", Section 507, "Asphaltic Surface Treatment", nor for any emulsions of cutbacks.

Item 510-02, Pavement Widening, and all contract pay items under Sections 502 and 508, will be eligible for payment adjustments of asphalt materials. No payment adjustment will be made for other asphalt materials, including emulsions and cutbacks.

The base price indices for asphalt cements and fuels will be posted on the DOTD internet website before the 10th calendar day of each month at the following URL: www.dotd.louisiana.gov/lettings/lac_price_index/priceindices.asp.

(c) Fuels: The base price index for this project will be the monthly price index in effect when bids are opened for the project. The monthly price index will be the minimum price quotations for unleaded gasoline and No. 2 diesel fuel listed for the New Orleans area in *Platt's Oilgram and Price Report* effective on the first calendar day of each month.

Payment adjustment will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,

$$P_a = (A - 1.05B) \times Q \times F$$

If Base Price Index exceeds Monthly Price Index,

$$P_a = (0.95B - A) \times Q \times F$$

Where:

P_a	=	Price adjustment.
A	=	Monthly Price Index in dollars per gallon/liter.
B	=	Base Price Index in dollars per gallon/liter.
Q	=	Pay Item Quantity (Pay Units).
F	=	Fuel Usage Factor Gal (L)/Pay Unit.

The following is a listing of contract pay items that are eligible for payment adjustment and the fuel usage factors that will be used in making such adjustment. Contract items that expand the items listed herein by use of letter or number designations are also eligible for fuel price adjustments; for example:

Item 601-01-G, Portland Cement Concrete Pavement 8 inches (200 mm) thick.

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**ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL
PAYMENT ADJUSTMENT⁷**

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel ²	Gasoline
203-01 ¹	General Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-02	Drainage Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-03 ¹	Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-04	Nonplastic Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-07	Borrow (Vehicular Measurement)	gal/cu yd	10,000 cu yd	0.29	0.15
301-01	Class I Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
301-02	Class I Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
302-01	Class II Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
302-02	Class II Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
303-01	In-Place Cement Stabilized Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
304-02	Lime Treatment (Type B)	gal/sq yd	50,000 sq yd	0.04	0.03
304-03	Lime Treatment (Type C)	gal/sq yd	50,000 sq yd	0.04	0.03
304-04	Lime Treatment (Type D)	gal/sq yd	50,000 sq yd	0.04	0.03
305-01	Subgrade Layer (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
308-01	In-Place Cement Treated Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
401-01	Aggregate Surface Course (Net Section)	gal/cu yd	3,000 cu yd	0.88	0.57
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	gal/cu yd	3,000 cu yd	0.88	0.57
502-01	Superpave Asphaltic Concrete	gal/ton	1000 ton	2.40 ³	0.2
502-02	Superpave Asphaltic Concrete	gal/cu yd	500 cu yd	4.80 ⁴	0.4
502-03	Superpave Asphaltic Concrete (" Thick)	gal/sq yd	10,000 sq yd	0.13 ^{5,6}	0.01 ⁶
508-01	Asphaltic Concrete (SMA)	gal/ton	1000 ton	2.40 ³	0.2
510-02	Pavement Widening	gal/sq yd	3,000 sq yd	0.86	0.24
601-01	Portland Cement Concrete Pavement (" Thick)	gal/sq yd	15,000 sq yd	0.11	0.15

- 1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
- 2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
- 3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 1.67 gal/ton.
- 4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 13.34 gal/cu yd.
- 5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.09 gal/sq yd.
- 6 Per inch of thickness.
- 7 No fuel adjustment will be allowed for waste oil.

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**ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL
PAYMENT ADJUSTMENT (METRIC)⁷**

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel ²	Gasoline
203-01 ¹	General Excavation	l/m ³	7,600 m ³	1.44	0.74
203-02	Drainage Excavation	l/m ³	7,600 m ³	1.44	0.74
203-03 ¹	Embankment	l/m ³	7,600 m ³	1.44	0.74
203-04	Nonplastic Embankment	l/m ³	7,600 m ³	1.44	0.74
203-07	Borrow (Vehicular Measurement)	l/m ³	7,600 m ³	1.44	0.74
301-01	Class I Base Course	l/m ³	2,300 m ³	4.36	2.82
301-02	Class I Base Course (mm Thick)	l/m ²	41,800 m ²	0.18	0.14
302-01	Class II Base Course	l/m ³	2,300 m ³	4.36	2.82
302-02	Class II Base Course (mm Thick)	l/m ²	41,800 m ²	0.18	0.14
303-01	In-Place Cement Stabilized Base Course	l/m ²	41,800 m ²	0.18	0.14
304-02	Lime Treatment (Type B)	l/m ²	41,800 m ²	0.18	0.14
304-03	Lime Treatment (Type C)	l/m ²	41,800 m ²	0.18	0.14
304-04	Lime Treatment (Type D)	l/m ²	41,800 m ²	0.18	0.14
305-01	Subgrade Layer (mm Thick)	l/m ²	41,800 m ²	0.18	0.14
308-01	In-Place Cement Stabilized Base Course	l/m ²	41,800 m ²	0.18	0.14
401-01	Aggregate Surface Course (Net Section)	l/m ³	2,300 m ³	4.36	2.82
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	l/m ³	2,300 m ³	4.36	2.82
502-01	Superpave Asphaltic Concrete	l/Mg	900 Mg	10.01 ³	0.83
502-02	Superpave Asphaltic Concrete	l/m ³	400 m ³	23.77 ⁴	1.98
502-03	Superpave Asphaltic Concrete (mm Thick)	l/m ²	8,400 m ²	0.59 ^{5,6}	0.45 ⁶
508-01	Asphaltic Concrete (SMA)	l/Mg	900 Mg	10.01 ³	0.83
510-02	Pavement Widening	l/m ²	2,500 m ²	3.89	1.09
601-01	Portland Cement Concrete Pavement (mm Thick)	l/m ²	12,500 m ²	0.5	0.68

- 1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
- 2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
- 3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 6.97 l/mg.
- 4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 16.53 l/m³.
- 5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.41 l/m².
- 6 Per mm of thickness.
- 7 No fuel adjustment will be allowed for waste oil.

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SUPERPAVE ASPHALTIC CONCRETE MIXTURES (11/08): Section 502, Superpave Asphaltic Concrete Mixtures of the 2006 Standard Specifications as amended by the supplemental specifications thereto, is further amended as follows.

Subsection 502.04, Job Mix Formula Validation.

Delete the first sentence of the sixth paragraph and substitute the following.

A JMF is considered validated if the following parameters are 71 percent within limits of the JMF and meet the specifications requirements.

Subsection 502.05, Plant Quality Control.

Delete the first paragraph and substitute the following.

For quality control purposes, the contractor shall obtain a minimum of two (2) samples of mixture from each subplot using a stratified random sampling approach. Test results for theoretical maximum specific gravity (G_{mm}) and measured bulk specific gravity (G_{mb}) at N_{max} and percent G_{mm} at $N_{initial}$, on samples of each subplot shall be reported. Control charts may be requested by the engineer if mixture problems develop. Quality control gyratory samples may be aged or unaged at the contractor's option, but the method chosen shall be used consistently throughout the project. If aged samples are used, report the measured G_{mb} at N_{max} . If unaged samples are used, report the estimated G_{mb} at N_{max} . One loose mix sample shall be taken from each subplot after placement of the mix in the truck. The mix shall be tested by the contractor at the plant for aggregate gradation, asphalt content and percent crushed aggregate. The mix shall be tested in accordance with DOTD TR 309, TR 323 and TR 306. The lot average and standard deviation shall be determined for aggregate gradation and asphalt content. The percent within limits (PWL) shall be determined on the Nos. 8 and 200 (2.36 mm and 75 μ m) sieves and for G_{mm} . Corrective action shall be taken if these parameters fall below 71 PWL. For each lot, the contractor shall report all quality control data to the DOTD Certified Plant Technician. The full range of gradation mix tolerances will be allowed even if they fall outside the control points. The District Laboratory Engineer may require re-validation of the mix when the average of the Quality Control data indicates non-compliance with the specified limits or tolerances.

Subsection 502.15, Measurement.

Subheading (c), Surface Tolerance Incentive Measurement.

Delete the first paragraph and substitute the following.

At the completion of construction of the project, an independent certified profiler such as that of a private company or the Materials and Testing Section, approved by the Department, shall be used to measure a continuous profile from the start station to the end station of the construction project for the purpose of determining qualification for incentive pay under Subsection 502.16(e). Bridges and 300 feet (90 m) on each end of the bridge will be excluded from measurements for surface tolerance incentive pay.

Delete Table 502-7A, Payment Adjustment Schedule for Plant Acceptance and substitute the following.

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**Table 502-7A
Payment Adjustment Schedule for Plant Acceptance**

Air Voids PWL (90 AQL)	Percent Payment
71-100	100
61-70	90
51-60	80
≤50	50 or Remove ¹

¹At the option of the Department after investigation.

Delete Table 502-7B, Payment Adjustment Schedule for Roadway Density and substitute the following.

**Table 502-7B
Payment Adjustment Schedule for Roadway Density**

Roadway Density PWL (90 AQL)	Percent Payment
99-100	102
81-98	100
71-80	95
51-70	80
≤50	50 or Remove ¹

¹At the option of the Department after investigation.

Delete Table 502-8A, Payment Adjustment Schedules for Longitudinal Surface Tolerance, Maximum International Roughness Index, inches per mile (mm per km) and substitute the following.

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**Table 502-8A
Payment Adjustment Schedules for Longitudinal
Surface Tolerance, Maximum International Roughness Index,
inches per mile (mm per km)**

Percent of Contract Unit Price (by Sublot) ¹	102% ²	100%	90%	80%	50% or Remove ³
Category A All Interstates, Multi-Lift New Construction and Overlays of More than two Lifts	<45 (<710)	<65 (<1030)	65-75 (1030-1180)	NA	>75 (>1180)
Category B One or Two Lift Overlays Over Cold Planed Surfaces, and Two-Lift Overlays Over Existing Surfaces ⁴	<55 (<870)	<75 (<1180)	75-89 (1180-1400)	NA	>89 (>1400)
Category C Single-Lift Overlays Over Existing Surfaces ⁴	N/A	<85 (<1340)	85-95 (1340-1500)	>95-110 (>1500-1740)	>110 (>1740)
Longitudinal Surface Tolerance Incentive Pay, Final Completion, Average of All Travel Lanes ⁵	≤ 45 (≤ 710)				

¹Or portion of sublot placed on the project.

²Maximum payment for sublots with exception areas, exclusions or grinding is 100 percent, unless the excluded area is a bridge end.

³At the option of the engineer.

⁴ Existing surfaces include reconstructed bases without profile grade control.

⁵Only Category A projects are eligible for incentive. However, any grinding except within 300 feet (90 m) of a bridge end will cause the roadway to be ineligible for surface tolerance incentive pay. Measurements must be verified by an independent entity.

Delete Table 502-8B, Individual Wheelpath Deficient Area Limits, Maximum International Roughness Index, Inches per Mile (mm per km) and substitute the following.

**Table 502-8B
Individual Wheelpath Deficient Area Limits
Maximum International Roughness Index, inches per mile (mm per km)**

Any 0.05 Mile (0.08 km) Segment	Wearing Course	Binder Course
Category A	89 (1400)	130 (2050)
Category B	99 (1560)	150 (2370)
Category C	N/A	N/A

TEMPORARY TRAFFIC CONTROL (03/09): Section 713 of the 2006 Standard Specifications and the Supplemental Specifications is amended as follows:

Subsection 713.04, Temporary Signs and Barricades, is amended to include the following:

(d) Project Signs: The contractor shall furnish, install, and maintain “project signs” in accordance with the following requirements.

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Project signs shall conform to the requirements of Section 713 and the project sign detail(s) contained elsewhere herein. Sign layout details are provided in the Construction Proposal Information Section contained elsewhere herein and are also available on the DOTD Construction, and American Recovery and Reinvestment Act of 2009 (ARRA) websites (<http://www.fhwa.dot.gov/economicrecovery/arrasigndetail.pdf>).

Project signs shall be required at the beginning and end of the project and shall follow sign G-20-1, "Road Work Next 'X' Miles", or as directed by the engineer.

In no case shall project signs be placed to obscure other traffic control devices. Project signs will not be allowed at the following locations:

- On the front, back, adjacent to or around any traffic control device, including traffic signs, signals, changeable messages signs, traffic control device posts or structures, or bridge piers.
- At key decision points where a driver's attention is more appropriately focused on traffic control devices, roadway geometry, or traffic conditions. These locations include, but are not limited to exit and entrance ramps, intersections controlled by traffic signals or by stop or yield signs, highway-rail grade crossings, and areas of limited sight distance.

Payment for all project signs within this subsection shall include all labor, materials, tools, and equipment required to complete the work and shall be included in the contract unit price for Item 713-01 Temporary Signs and Barricades.

TEMPORARY PRECAST CONCRETE BARRIERS (08/06): Subsection 713.05 of the standard specifications is amended to include the following.

Temporary precast concrete barriers to be furnished by the Department are stored at District 02 Headquarters maintenance yard in Bridge City. The contractor shall load and transport the barrier units to the work site as directed. After completion of the work the barrier units shall be returned to the storage site by the contractor.

LANDSCAPING (03/09): Section 719, Landscaping of the Standard Specifications, as amended by the supplemental specifications thereto is further amended as follows:

Subsection 719.06, Construction Methods.

Subheading (a), Seasonal Operations is amended to delete the first paragraph and substitute the following.

Unless otherwise directed by the engineer in writing, the planting season is between November 1 and April 15.

ELECTRICAL SYSTEMS (03/09) (SEC730): Section 730 of the Standard Specifications, as amended by the supplemental specifications thereto, is further amended as follows.

Subsection 730.04, Drawings and Equipment Submittals is amended as follows.

Subheading (b), As-Built Drawings is amended to delete the third sentence and substitute the following.

The drawings shall show the exact location of the underground wiring, light poles, junction boxes, under roadway crossings, service poles, controllers, disconnects, and conduit or cables.

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Subsection 730.08, Measurement is amended as follows.

Subheading (e), Jacked or Bored Casing is deleted and the following substituted.

(e) Jacked or Bored Casing: Jacked or bored casings will be measured by the linear foot (lin m) of casing furnished and installed, which will include the casing, fittings, and required excavation and backfill.

Subheading (t), Modular Breakaway Cable System is added as follows.

(t) Modular Breakaway Cable System: Modular breakaway electrical cable systems for low mast light poles shall be measured per each and shall include all materials, labor, equipment, and tools necessary to furnish and install a complete system in accordance with the plans and specifications.

Subheading (u), Disconnect is added as follows.

(t) Disconnect: Disconnects shall be measured per each and shall include all materials, labor, equipment, and tools necessary to furnish and install this item in accordance with the plans and specifications.

Subheading (v), Duct Marker is added as follows.

(t) Duct Markers: Duct markers shall be measured per each and shall include all materials, labor, equipment, and tools necessary to furnish and install this item in accordance with the plans and specifications.

Subheading (w), Underground Marker Tape is added as follows.

(u) Underground Marker Tape: Marker tape shall be measured per linear foot and shall include all materials, labor, equipment, tools necessary to furnish and install this item in accordance with the plans and specifications.

Subsection 730.09, Payment is amended to add the following pay items.

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
730-19	Modular Breakaway Cable System	Each
730-20	Disconnect (Type)	Each
730-21	Duct Marker (Type)	Each
730-22	Underground Marker Tape (Size and Type)	Linear Foot (Lin m)

PLASTIC PAVEMENT MARKINGS (09/07): Section 732 of the 2006 Standard Specifications and the supplemental specifications thereto, is amended as follows.

Subsection 732.03, Construction Requirements for Plastic Pavement Marking Material.

Heading (a) is amended as follows.

The first paragraph is deleted and the following substituted.

(a) Equipment for Standard (Flat) Thermoplastic Marking Material: The application equipment shall consist of an extrusion die or a ribbon gun that simultaneously deposits and shapes lines at a thickness of 90 mils (2.3 mm) or greater on the pavement surface. When restriping onto existing thermoplastic markings, only a ribbon gun shall be used. Finished markings shall be continuous and uniform in shape, and have clear and sharp dimensions. Applicators shall be capable of producing various widths of traffic markings. Applicators shall

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produce sharply defined lines and provide means for cleanly cutting off stripe ends and applying broken lines. The ribbon extrusion die or shaping die shall not be more than 2 inches (50 mm) above the roadway surface during application. A spray application will only be allowed when applying 40 mil (1.0 mm) thermoplastic.

Heading (e) is deleted and the following substituted.

(e) Application of Surface Primer: A single component surface primer will be required prior to placement of preformed plastic markings over an existing painted stripe, over oxidized asphalt, or when striping over existing thermoplastic on portland cement concrete surfaces unless otherwise directed by the engineer. A two component epoxy primer sealer will be required prior to placement of thermoplastic materials on portland cement concrete surfaces unless otherwise directed by the engineer.

PIPE EXTENSIONS (SEWAGE EFFLUENT GRAVITY DISCHARGE) (02/09): Section 742, Sanitary Sewer Systems of the Standard Specifications as amended by the supplemental specifications thereto, is further amended as follows.

Subsection 742.04, Construction Requirements is amended to add the following subheading.

(e) Sewage Effluent Gravity Discharge Pipe Extensions: Pipe extensions for sewage effluent gravity discharge lines shall be in accordance with the plans or as directed. Pipe extensions shall be equal in quality and size to that of the existing installation and meet the requirements of the utility and code. Unless otherwise directed, the same material manufacturer for each proposed extension shall be used throughout the work.

Subsection 742.06, Measurement is amended to add the following subheading.

(j) Sewage Effluent Gravity Discharge Pipe Extensions: Pipe extensions for sewage effluent gravity discharge lines will be measured by the linear foot (lin m) of extended pipe.

Subsection 742.07, Payment is amended as follows.

Subheading (e) is deleted and the following substituted.

(e) Payment for Sewage Effluent Gravity Discharge Pipe Extensions will be paid for at the contract unit price per linear foot (lin m) of extended pipe which includes all materials, tools, labor, equipment, and incidentals necessary to complete the item.

Subheading (f) is added as follows.

(f) Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
742-01	Sanitary Sewer Pipe (Size)	Linear Foot (lin m)
742-02	Adjusting Sanitary Sewer House Connections	Each
742-03	Adjusting Sanitary Sewer Service Lines	Linear Foot (lin m)
742-04	Casing (Size & Type)	Linear Foot (lin m)
742-05	Pipe Extensions (Sewage Effluent Gravity Discharge) (Size)	Linear Foot (lin m)

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ASPHALT MATERIALS AND ADDITIVES (04/08): Section 1002 of the 2006 Standard Specifications and the supplemental specifications thereto is amended as follows.

Subsection 1002.02, Asphalt Material Additives is amended as follows.

Table 1002-1, Performance Graded Asphalt Cements is deleted and the following substituted.

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**Table 1002-1
Performance Graded Asphalt Cements**

Property	AASHTO Test Method	PG82-22rm ⁶	PG76-22m	PG70-22m	PG64-22	PG58-28
		Spec.	Spec.	Spec.	Spec.	Spec.
Tests on Original Binder:						
Rotational Viscosity @ 135°C, Pa·s ¹	T 316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	1.00+ @ 82°C	1.00+ @ 76°C	1.00+ @ 70°C	1.30+ @ 64°C	1.00+ @ 58°C
Flash Point, °C	T 48	232+	232+	232+	232+	232+
Solubility, % ²	T 44	N/A	99.0+	99.0+	99.0+	99.0+
Separation of Polymer, 163°C, 48 hours, degree C difference in R & B from top to bottom ⁵	ASTM D 7173 AASHTO T 53	---	2-	2-	---	---
Force Ductility Ratio (f ₂ /f ₁ , 4°C, 5 cm/min., f ₂ @ 30 cm elongation) ³	T 300	---	0.30+	---	---	---
Force Ductility, (4°C, 5 cm/min, 30 cm elongation, kg) ³	T 300	---	---	0.23+	---	---
Tests on Rolling Thin Film Oven Residue:						
Mass loss, %	T 240	1.00-	1.00-	1.00-	1.00-	1.00-
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	2.20+ @ 82°C	2.20+ @ 76°C	2.20+ @ 70°C	2.20+ @ 64°C	2.20+ @ 58°C
Elastic Recovery, 25°C, 10 cm elongation, % ⁴	T 301	60+	60+	40+	---	---
Ductility, 25°C, 5 cm/min, cm	T 51	---	---	---	100+	---
Tests on Pressure Aging Vessel Residue:						
Dynamic Shear, @ 25°C, 10 rad/s, G* Sin Delta, kPa	T 315	5000-	5000-	5000-	5000-	5000- @ 19°C
Bending Beam Creep Stiffness, S, MPa @ -12°C.	T 313	300-	300-	300-	300-	300- @ -18°C
Bending Beam Creep Slope, m value, @ -12°C	T 313	0.300+	0.300+	0.300+	0.300+	0.300+ @ -18°C

¹The rotational viscosity will be measured to determine product uniformity. The rotational viscosity measured by the supplier shall be noted on the Certificate of Delivery. A binder having a rotational viscosity of 3.0 Pa·s or less will typically have adequate mixing and pumping capabilities. Binders with rotational viscosity values higher than 3.0 Pa·s should be used with caution and only after consulting with the supplier as to any special handling procedures and guarantees of mixing and pumping capabilities.

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²Not all polymers are soluble in the specified solvents. If the polymer modified asphalt digested in the solvent will not pass the filter media, a sample of the base asphalt used in making the polymer modified asphalt should be tested for solubility. If the solubility of the base asphalt is at least 99.0%, the material will be considered as passing.

³AASHTO T 300 except the second peak (f₂) is defined as the stress at 30 cm elongation.

⁴AASHTO T 301 except elongation shall be 10 cm.

⁵Prepare samples per ASTM D 7173. Determine softening point of top and bottom per AASHTO T 53.

⁶The quality assurance plan for this product will require the contractors who use this material to submit written documentation of tank cleaning annually. Contractors must have tank mixers. Written certificates of analysis from the asphalt binder supplier confirming rubber source and size distribution of rubber used shall be furnished to the Materials Laboratory.

Add the following Table 1002-12, Anionic Trackless Tack Coat Grade NTSS-1HM.

Table 1002-12
Anionic Trackless Tack Coat Grade NTSS-1HM

Property	AASHTO Test Method	Specification Deviation	
		100% Pay	50% Pay or Remove ¹
Viscosity, Saybolt Furol @ 25°C, s	T 59	15 - 100	---
Storage Stability, 24 Hour, %	T 59	1.0-	---
Settlement, 5 Days, %	T 59	5.0-	---
Residue by Distillation, %	T 59	50+	49-
Oil Distillate, %	T 59	1.0-	---
Sieve Test ² , (Retained on the 850 µm), %	T 59	0.3-	---
Tests on Residue			
Penetration @ 25°C, 100g, 5s, dmm	T 49	20-	---
Softening Point, Ring and Ball, °C	T 53	65+	64-
Solubility, %	T 44	97.5+	---
DSR @ 25°C; G*Sin δ, 10 rad / s, kPa	T 315	1.0+	---

¹ At the option of Engineer.

² Sieve tests may be waived if no application problems are present in the field.

BASE COURSE AGGREGATES (07/08): Subsection 1003.03 of the 2006 Standard Specifications is amended to include the following.

(e) Blended Calcium Sulfate: When blended calcium sulfate base course material is allowed on the plans, it shall consist of calcium sulfate from a source approved by the Materials and Testing Section and be blended with an approved aggregate or lime. The source shall have a quality control program approved by the Materials and Testing Section. The source shall have been given environmental clearance by the Department of Environmental Quality for the intended use, and written evidence of such environmental clearance shall be on file at the Materials and Testing Section. DOTD monitoring for compliance with environmental regulations will be limited to the pH testing stated herein below. The blended material shall be non-plastic and reasonably free from organic and foreign matter. The pH shall be a minimum of

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5.0 when tested in accordance with DOTD TR 430. Re-evaluation will be required if the source of the aggregate or lime that is blended with the calcium sulfate changes.

Blended calcium sulfate material used as base course shall comply with the following gradation requirements when tested in accordance with DOTD TR 113, modified to include a maximum drying temperature of 140°F (60°C). Sampling shall be taken from an approved stockpile at the point of origin.

<u>U.S. Sieve</u>	<u>Metric Sieve</u>	<u>Percent Passing</u>
1-1/2 inch	37.5 mm	60 - 100
1 inch	25.0 mm	40 - 80
3/4 inch	19.0 mm	30 - 70
No. 4	4.75 mm	20 - 65
No. 200	75 µm	0 - 25

Blended calcium sulfate shall be sampled in accordance with the requirements for stone in Section 302 of the Materials Sampling Manual.

COOPERATION WITH UTILITIES (07/07): Subsection 105.06 of the Standard Specifications is amended to include the following.

Utility facilities will be removed, relocated, adjusted or abandoned in accordance with agreements between the Department and utility owners listed below. Starting dates for such work will be determined by the engineer and may be different for each utility and may not be underway concurrently with the contractor's work or with other utility relocations. Utility relocations can be within the construction limits covered by this contract. The furnishing of the following estimated completion times for utility work is for information purposes only and will not relieve the contractor of any requirements of this subsection nor will it preclude the granting of contract time credits in accordance with the provisions of this subsection. A utility company calendar day shall be the same as defined in Subsection 101.03 of the standard specifications.

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UTILITY OWNER	Estimated Calendar Days After Right-Of-Way Is Clear
Cox Communications Louisiana, LLC 2121 Airline Drive Metairie, LA 70001	22
AT&T Louisiana 840 Poydras Avenue Room 1419 New Orleans, LA 70112	120
Entergy Electric 3700 Tulane Avenue New Orleans, LA 70119	90
Entergy Gas 3700 Tulane Avenue New Orleans, LA 70119	58

ITEMS S-001 THRU S-306: These items are described in the Technical Specifications as included elsewhere in the construction proposal.

Payment will be at the unit contract price under the following:

- Item S-001, Geogrid, per square yard.
- Item S-002, Temporary Construction Entrance, per each.
- Item S-102, Saw Cutting (Inch/Foot), per linear foot.
- Item S-103, Reinforced Concrete Bus Pad (9" Thick, 4000 PSI) (12' x 60'), per square yard.
- Item S-104, Relocate Light Standard, per each.
- Item S-105, Exploration and Location of All Existing Utilities, per each.
- Item S-106, Remove and Salvage Light Standards, per each.
- Item S-107, Street Light Cable in Conduit, per linear foot.
- Item S-108, Emergency Electrical Splices, per each.
- Item S-120, Signal Support (Pedestal, Mounted), per each.
- Item S-121, Signal Support (25' Single Mast Arm), per each.
- Item S-122, Signal Support (30' Single Mast Arm), per each.
- Item S-123, Signal Support (35' Single Mast Arm), per each.
- Item S-124, Signal Support (40' Single Mast Arm), per each.
- Item S-125, Signal Support (45' Single Mast Arm), per each.
- Item S-126-A, Signal Head – Horizontal (3-Section, R Y G), (12" LED Lens), per each.
- Item S-126-B, Signal Head – Vertical (3-Section R Y G), (12" LED Lens), per each.
- Item S-126-C, Signal Head – Vertical (3-Section R YLT GLT), (12" LED Lens), per each.
- Item S-126-D, Signal Head – Horizontal (3-Section R YRT GRT), (12" LED Lens), per each.
- Item S-127, Signal Controller – (NEMA TS-2, Type 6 Base Mounted Cabinet), per each.

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- Item S-128, Conductor 7C (Single, #14 AWG Stranded) Traffic Signal Cable, per linear foot.
- Item S-129, Jack or Bored Conduit, per linear foot.
- Item S-130, Signal Service (Pedestal Mount), per each.
- Item S-131, Conduit 1" PVC in Earth, per linear foot.
- Item S-132, Conduit 2" PVC in Earth, per linear foot.
- Item S-133, Conduit 3" PVC in Earth, per linear foot.
- Item S-134, Conduit 3" PVC Jack and Bore, per linear foot.
- Item S-135, Conduit 4" PVC in Earth, per linear Foot.
- Item S-136, Conduit 1" (Rigid), per linear foot.
- Item S-137, Underground Junction Box (Type D), per each.
- Item S-138, Underground Junction Box (Type F), per each.
- Item S-139, Traffic Manhole, per each.
- Item S-140, Loop Detectors (Saw Loop Slot in Pavement), per linear foot.
- Item S-141, Cable Loop Lead In, per linear foot.
- Item S-142, Optical Emitter, per each.
- Item S-143, Conductor, 3C (Signal, #14 AWG Stranded) Optical Detector Cable, per linear foot.
- Item S-144, Uni-Directional Optical Detectors, per each.
- Item S-146, Conductor, 1-6PR Interconnect Cable, per linear foot.
- Item S-148, Street Name Signs (On New Post), per each.
- Item S-149, Conductor, 2C/OS (Loop Lead-In, #14 AWG Stranded) Loop Wire, per linear foot.
- Item S-150, Impact Attenuator, per each.
- Item S-151, Police Traffic Control, per hour.
- Item S-152, Conduit 2" PVC Jack and Bore, per linear foot.
- Item S-153, Conduit 4" PVC Jack and Bore, per linear foot.
- Item S-154, Trenching and Backfilling, per linear foot.
- Item S-155, Signs (R3-1), per square foot.
- Item S-156, Signs (R3-2), per square foot.
- Item S-157, Signs (R3-5R), per square foot.
- Item S-158, Signs (R3-7R), per square foot.
- Item S-159, Signs (R5-1), per square foot.
- Item S-160, Signs (R10-10), per square foot.
- Item S-161, Signs (Special, Yield to Pedestrian), per square foot.
- Item S-162, Signs (Special, Street Name), per square foot.
- Item S-163, Conductor, 3C (Power, #6 AWG), per linear foot.
- Item S-201, Sewerage and Water Board Electrical Ductbank and Manholes, Complete, per lump sum.
- Item S-202, Drain House Connection from New Drain Line to Back of Curb (6" PVC), per each.
- Item S-203, Drain House Connection Beyond Back of Curb (6" PVC), per linear foot.
- Item S-204, Collector Line to Catch Basin For Drain House Connections (8" PVC), per linear foot.
- Item S-205, Adjust Drain Cleanout Box, per each.

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- Item S-209, Sewer Point Repair Up to Ten Feet, per linear foot.
- Item S-210, Sewer Point Repair Beyond Ten Feet, per linear foot.
- Item S-211, Remove and Replace Existing Sewer House Connection From New Main to Back of Curb, per each.
- Item S-212, Remove and Replace Sewer House Connection Beyond Back of Curb, per linear foot.
- Item S-206, Remove Mud and Debris from Meter Box, per each.
- Item S-207, Replace Broken Water Meter Box, per each.
- Item S-208, Adjust Water Meter Box, per each.
- Item S-213, Replace 5/8" and 3/4" Water House Connection (From Main to Meter), per each.
- Item S-214, Replace 1" Water House Connection (From Main to Meter), per each.
- Item S-215, Replace 3/4" or 1" Water House Connection (From Meter to Property Line), per linear foot.
- Item S-216, Plug Existing Drains, per each.
- Item S-217, Fill Drain with Mississippi River Sand, per cubic yard.
- Item S-301, Tree Removal (Up to 10.0" DBH), per each.
- Item S-302, Tree Removal (10.1" DBH to 20.0" DBH), per each.
- Item S-303, Tree Trimming, per lump sum.
- Item S-304, Root Pruning, per each.
- Item S-305, Root Trenching, per linear foot.
- Item S-306, Restoration of Existing Plant and Flower Beds, per lump sum.

CONTRACT TIME (03/05): The entire contract shall be completed in all details and ready for final acceptance in accordance with Subsection 105.17(b) within the time specified by the contractor, which shall not exceed the maximum allowable contract time stated on the "Contract Time" form contained elsewhere herein.

Prior to assessment of contract time, the contractor will be allowed 30 calendar days from the date stipulated in the Notice to Proceed to commence with portions of the contract work including but not limited to assembly periods, preparatory work for materials fabrications such as test piles, or other activities which hinder progress in the beginning stages of construction. Prior to issuance of the Notice to Proceed, the Department will consider extending the assembly period, upon written request from the contractor justifying the need for additional time.

The contractor shall be responsible for maintenance of traffic from the beginning of the assembly period. During the assembly period, the contractor will be allowed to do patching and other maintenance work necessary to maintain the roadway with no time charges when approved by the engineer.

If the contractor begins regular construction operations prior to expiration of the assembly period, the assessment of contract time will commence at the time construction operations are begun.

The contractor is directed to the special provisions and the plans for any restrictions that may affect work schedules.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS
 (FOR 2006 STANDARD SPECIFICATIONS)

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LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT SUPPLEMENTAL SPECIFICATIONS

The 2006 Louisiana Standard Specifications for Roads and Bridges and supplemental specifications thereto are amended as follows.

PART I – GENERAL PROVISIONS

SECTION 101 – GENERAL INFORMATION, DEFINITIONS, AND TERMS:

Subsection 101.03 – Definitions (07/07), Pages 3 – 13.

Delete the definition for “Proposal/Bid Guaranty” and substitute the following.

Proposal / Bid Guaranty. The required security furnished with a bid. The only form of security acceptable is a Bid Bond.

SECTION 102 – BIDDING REQUIREMENTS:

Subsection 102.09 – Proposal / Bid Guaranty (07/07), Page 19.

Delete the contents of this subsection and substitute the following.

PROPOSAL/BID GUARANTY. Each bid shall be accompanied by a proposal/bid guaranty in an amount not less than five percent of the total bid amount when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than \$50,000. No proposal/bid guaranty is required for projects when the bidder's total bid amount as calculated by the Department is \$50,000 or less. The official total bid amount for projects that include alternates is the total of the bidder's base bid and all alternates bid on and accepted by the Department. The proposal/bid guaranty submitted by the bidder shall be a bid bond made payable to the contracting agency as specified on the bid bond form provided in the construction proposal. No other form of security will be accepted.

The bid bond shall be on the "Bid Bond" form provided in the construction proposal, on a form that is materially the same in all respects to the "Bid Bond" form provided, or on an electronic form that has received Department approval prior to submission. The bid bond shall be filled in completely, shall be signed by an authorized officer, owner or partner of the bidding entity, or each entity representing a joint venture; shall be signed by the surety's agent or attorney-in-fact; and shall be accompanied by a notarized document granting general power of attorney to the surety's signer. The bid bond shall not contain any provisions that limit the face amount of the bond.

The bid bond will be written by a surety or insurance company that is in good standing and currently licensed to write surety bonds in the State of Louisiana by the Louisiana Department of Insurance and also conform to the requirements of LSA-R.S. 48:253.

All signatures required on the bid bond may be original, mechanical reproductions, facsimiles or electronic. Electronic bonds issued in conjunction with electronic bids must have written Departmental approval prior to use. The Department will make a listing of approved electronic sureties providers on the Bidx.com site.

SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

Subsection 107.05 – Federal Aid Participation (04/08), Pages 57 and 58.

Delete the second paragraph.

SECTION 108 – PROSECUTION AND PROGRESS:

Subsection 108.04 – Prosecution of Work (03/05) Pages 74 and 75.

Add the following sentence to the third paragraph of Heading (b).

Should the surety or the Department take over prosecution of the work, the contractor shall remain disqualified for a period of one year from the completion of the project, unless debarment proceedings are instituted.

When the Department of Transportation and Development is not the contracting agency on the project, the second paragraph under Heading (c) is deleted.

PART II – EARTHWORK

SECTION 202 – REMOVING OR RELOCATING STRUCTURES AND OBSTRUCTIONS:

Subsection 202.06 – Plugging or Relocating Existing Water Wells (03/04), Page 105.

Delete the first sentence and substitute the following.

All abandoned wells shall be plugged and sealed at the locations shown on the plans, or as directed by the engineer, in accordance with the “Water Well Rules, Regulations, and Standards, State of Louisiana.” This document is available at the Department of Transportation and Development, Water Resources Section, P. O. Box 94245, Baton Rouge, Louisiana 70804-9245. The Water Resource Section’s telephone number is (225) 274-4172.

PART III – BASE COURSES

SECTION 302 – CLASS II BASE COURSE:

Subsection 302.01 – Description (12/08), Page 150.

Add the following to the third paragraph:

(6) Blended Calcium Sulfate

Subsection 302.02 – Materials (12/08), Pages 150 and 151.

Add the following to the first paragraph:

_____ Blended Calcium Sulfate 1003.01 & 1003.03 (e)

Subsection 302.04 – General Construction Requirements (12/08), Page 152.

Add the following:

Blended calcium sulfate will be allowed in areas of new alignment, fill areas, and cut areas less than one foot.

In cut areas greater than one foot (300 mm), an additional one foot (300 mm) of undercut will be required prior to placement of BCS. The additional undercut area shall be replaced with non-plastic sand embankment and encapsulated with a Class D geotextile fabric. The additional

non-plastic material, geotextile fabric, and undercut shall be at no additional cost to the Department.

Blended calcium sulfate will not be allowed in areas needed to facilitate traffic control or when a soil cement base course is specified in the plans. Blended calcium sulfate shall not be placed within 10 feet (3.0 m) of metal drainage structures. The contractor will be allowed to substitute any untreated Class II base course material listed in Subsection 302.01. Flowable fill under Section 710, or other approved backfill material in Section 701 shall be used to backfill the drainage structure.

Subsection 302.05 – Mixing (08/06) (12/08), Pages 152 and 153.

Delete the first sentence of Subheading (b)(1), In-Place Mixing, and substitute the following.

In-place mixing shall conform to Heading (a)(1) except that the percentage of Type I portland cement required will be 6 percent by volume.

Add Heading (d) as follows:

(d) Blended Calcium Sulfate: Calcium sulfate shall be blended with an approved aggregate or lime prior to placement. The blended calcium sulfate material shall be uniformly mixed and sampled from dedicated stockpiles. Gradation sampling in accordance with Subsection 1003.03 shall be taken from the dedicated stockpiles at the point of material origin.

Subsection 302.06 – Transporting and Placing on Subgrade (12/08), Page 154.

Add the following:

Water shall be added or other suitable means taken to prevent dust during the transporting and placing of dry blended calcium sulfate.

Subsection 302.07 - Compacting and Finishing (12/08), Pages 154 and 155.

Add Heading (e) as follows:

(e) Blended Calcium Sulfate: Blended calcium sulfate shall be placed and spread on the subgrade and compacted to produce layers not exceeding 12 inches (300 mm) compacted thickness. During placement the material shall be thoroughly wetted by application of water to maintain 2 to 4 percent above optimum moisture. After application of water, allow the moisture to reach equilibrium in the base before applying rolling techniques. Rolling of BCS is required to the edge of the embankment or subgrade. Each layer shall be compacted to at least 95 percent of maximum dry density or compacted by an approved established rolling pattern determined by the project engineer before the next layer is placed. Optimum moisture and maximum density shall be determined in accordance with DOTD TR 418 Method G modified to include a maximum drying temperature of 140°F (60°C).

Add Heading (f) as follows:

(f) Proof Rolling: Proof rolling shall be done by a load of 25 tons (25 Mg) in a 12 to 14 cubic yard (9 to 10.5 cubic meters) tandem dump truck with ten wheels or approved loaded truck

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determined by the project engineer. Proof rolling shall be a minimum of 5 passes in each direction at the same locations and at a maximum vehicle speed of 3 mph (4.8 km/h).

All BCS base will be tested by proof rolling prior to placement of surfacing material, including asphalt binder. Any irregularities or soft spots shall be corrected prior to placement of the surfacing material. Any rain event on the project site between the proof rolling and placement of the surfacing will require an additional proof rolling as noted above.

Subsection 302.09 – Protection and Curing (12/08), Page 155.

Add Heading (c) as follows:

(c) Blended Calcium Sulfate: Protection and curing of blended calcium sulfate shall be in accordance with Subsection 302.09(b).

Subsection 302.12 – Acceptance Requirements (12/08), Pages 156 – 161.

Add the following to Heading (a):

The acceptance requirements for blended calcium sulfate base course shall be the same as stone base course with the following modifications. Upon completion of compaction operations, the density will be determined in accordance with DOTD TR 401 except that all moisture content determinations for density calculations shall be conducted by oven drying the material for 24 hours at 140°F (60°C). A forced draft type oven capable of maintaining the temperature shall be provided by the contractor for field moisture content determination for density control.

SECTION 305 – SUBGRADE LAYER:

Subsection 305.06 – Payment (01/08), Page 184.

Delete the contents of this subsection and substitute the following.

305.06 Payment. Payment for subgrade layer will be made at the contract unit price which includes lime, lime treatment, cement, cement treatment, water, stone, recycled portland cement concrete, crushed slag, blended calcium sulfate, asphaltic concrete, and asphalt curing membrane or prime coat, subject to the payment adjustment provisions of Section 1002 for specification deviations of asphalt materials and Subsection 303.11(a) for density deficiencies of cement treated materials. Adjustments in pay for increase or decrease in the percent cement ordered by the engineer will be in accordance with Subsection 303.13. Adjustments in pay for increase or decrease in the percent lime ordered by the engineer will be based on the price of lime shown on paid invoices (total of all charges). The Materials and Testing Section will provide the payment adjustment percentage for properties of asphalt materials.

Payment for geotextile fabric will be included in the contract unit price for subgrade layer.

Payment will be made under:

Item No.	Pay Item	Pay Unit
305-01	Subgrade Layer _____in (mm) Thick	Square Yard (Sq m)

SECTION 307 – PERMEABLE BASES:

Subsection 307.02 – Materials (09/07), Pages 187 and 188.

Delete the contents of Subheading (b), Asphalt, and substitute the following.

(b) Asphalt: The asphalt for asphalt treated permeable base shall be an approved polymer modified asphalt cement, PG 76-22m, or PG 82-22rm complying with Section 1002. The percentage of asphalt cement shall be 2.0 percent to 4.0 percent by weight (mass) of the total mixture. Asphalt cement content and mixing process shall be such that all aggregates are visibly coated. The mixture shall retain 90 percent coating when tested in accordance with DOTD TR 317.

A job mix formula shall be submitted and approved in accordance with Section 502.

SECTION 308 – IN-PLACE CEMENT TREATED BASE COURSE:

All Subsections within Section 308 – (07/07), Pages 191 – 198.

Whenever the reference to “DOTD TR-432, Method D” is used, it shall mean “DOTD TR-432”.

PART V – ASPHALTIC PAVEMENTS

SECTION 502 – SUPERPAVE ASPHALTIC CONCRETE MIXTURES:

Subsection 502.02 – Materials (08/06) (11/07), Pages 210 – 213.

Delete Table 502-2, Superpave Asphalt Cement Usage under Subheading (a) and substitute the following.

Table 502-2
Superpave Asphalt Cement Usage

Current Traffic Load Level	Mixture Type	Grade of Asphalt Cement
Level 1	Wearing Course	PG 70-22m
	Binder Course	PG 70-22m
	Base Course	PG 64-22
Level 2	Wearing Course	PG 76-22m
	Binder Course	PG 76-22m
Level A	Incidental Paving	PG 70-22m

Note: A PG 82-22 rm, Waste Tire Rubber Modified Asphalt, may be substituted for any other grade of asphalt cement.

Delete Table 502-3, Aggregate Friction Rating under Subheading (c)(1) and substitute the following.

Table 502-3
Aggregate Friction Rating

Friction Rating	Allowable Usage
I	All mixtures
II	All mixtures
III	All mixtures, except travel lane wearing courses with plan ADT greater than 7000 ¹
IV	All mixtures, except travel lane wearing courses ²

¹ When plan current average daily traffic (ADT) is greater than 7000, blending of Friction Rating III aggregates and Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 30 percent by weight (mass) of the total aggregates shall have a Friction Rating of I, or at least 50 percent by weight (mass) of the total aggregate shall have a Friction Rating of II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

² When the average daily traffic (ADT) is less than 2500, blending of Friction Rating IV aggregates with Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 50 percent by weight (mass) of the total aggregate in the mixture shall have a Friction Rating of I or II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

Subsection 502.14 – Lot Sizes (11/07), Pages 232 and 233.

Delete the first sentence of the first paragraph and substitute the following.

A lot is a segment of continuous production of asphaltic concrete mixture from the same job mix formula produced for the Department at a specific plant, delivered to a specific DOTD project.

SECTION 508 – STONE MATRIX ASPHALT:

Subsection 508.01 – Description (09/07), Page 274.

Delete this subsection and substitute the following.

508.01 DESCRIPTION. This work consists of furnishing and constructing Stone Matrix Asphalt (SMA) which is a plant mixed asphalt concrete wearing course for high traffic applications. This mixture is a rut resistant hot mix design with stone on stone contact. The mixture shall be composed of a PG 76-22m, or PG 82-22rm asphalt cement and a gap graded coarse aggregate structure. Mineral filler and/or fibers shall be used to control draindown. This work shall be in accordance with these specifications, plan details, and as directed. All requirements of Section 502 apply to Stone Matrix Asphalt, except as modified herein. All plant and paving equipment and processes must meet the requirements of Section 503.

Mixture used for shoulder may be Stone Matrix Asphalt or any mixture type shown in Table 502-5.

Subsection 508.02 – Materials (09/07), Page 274.

Delete the contents of subheading (a), Asphalt Cement and substitute the following.

(a) Asphalt Cement: Asphalt cement shall be PG 76-22m, or PG 82-22rm as listed on QPL 41 and complying with Section 1002.

PART VI – RIGID PAVEMENT

SECTION 602 – PORTLAND CEMENT CONCRETE PAVEMENT

REHABILITATION:

Subsection 602.17 – Payment (09/07), Pages 341 – 344.

Delete the last paragraph of Subheadings (d), Full Depth Corner Patching of Jointed Concrete Pavement, (e) Full Depth Patching of Jointed Concrete Pavement, and (g) Patching Continuously Reinforced Concrete Pavement, and substitute the following.

Payment for deteriorated base course removed as directed by the engineer and replaced with concrete will be made as follows: The value per inch (mm) thickness will be determined by dividing the contract unit price per square yard (sq m) by the plan thickness. Thickness of patches will be measured from the surface that exists at the time of patching. Payment for the additional thickness will be made at 50 percent of the value per inch (mm) thus determined.

PART VII – INCIDENTAL CONSTRUCTION

SECTION 701 – CULVERTS AND STORM DRAINS:

All Subsections within Section 701 (08/07), Pages 347 – 358.

Delete Section 701, Culverts and Storm Drains and substitute the following.

SECTION 701

CULVERTS AND STORM DRAINS

701.01 DESCRIPTION. This work consists of furnishing, installing, and cleaning pipe, pipe arch, storm drains and sewers, also referred to as culverts or conduit, in accordance with these specifications and in conformity with lines and grades shown on the plans or established.

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701.02 MATERIALS. Materials shall comply with the following sections and subsections:

Usable Soil	203.06(a)
Selected Soil	203.06(b)
Plastic Soil Blanket	203.10
Mortar	702.02
Flowable Fill	710
Portland Cement Concrete	901
Reclaimed Asphaltic Pavement (RAP)	1003.01 & 1003.04(d)
Stone	1003.03(b)
Recycled Portland Cement Concrete	1003.03(c)
Granular Material	1003.07
Bedding Material	1003.08
Concrete Sewer Pipe	1006.02
Reinforced Concrete Pipe	1006.03
Reinforced Concrete Pipe Arch	1006.04
Gasket Materials	1006.06
Plastic Pipe	1006.07
Split Plastic Coupling Bands	1006.07(d)(4)
Plastic Yard Drain Pipe	1006.09
Bituminous Coated Corrugated Steel Pipe and Pipe Arch	1007.02
Structural Plate for Pipe, Pipe Arch and Arch	1007.04
Corrugated Aluminum Pipe and Pipe Arch	1007.05
Coupling Bands	1007.09
Reinforcing Steel	1009
Geotextile Fabric	1019

(a) Side Drain Pipe or Side Drain Pipe Arch: When the item for Side Drain Pipe or Side Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(b) Cross Drain Pipe or Cross Drain Pipe Arch: When the item for Cross Drain Pipe or Cross Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(c) Storm Drain Pipe or Storm Drain Pipe Arch: When the item for Storm Drain Pipe or Storm Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(d) Yard Drain Pipe: When the item for Yard Drain Pipe is included in the contract, the contractor has the option of furnishing concrete sewer pipe, plastic yard drain pipe or plastic pipe in accordance with Section 1006 unless otherwise specified.

(e) Material Type Abbreviations:

(1) Reinforced Concrete Pipe:

RCP	Reinforced Concrete Pipe
RCPA	Reinforced Concrete Pipe Arch

(2) Corrugated Metal Pipe:

CAP	Corrugated Aluminum Pipe
CAPA	Corrugated Aluminum Pipe Arch
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
CSPA	Corrugated Steel Pipe Arch
BCCSP	Bituminous Coated Corrugated Steel Pipe
BCCSPA	Bituminous Coated Corrugated Steel Pipe Arch

(3) Plastic Pipe:

PP	Plastic Pipe
PVCP	Polyvinyl Chloride Pipe
RPVCP	Ribbed Polyvinyl Chloride Pipe
CPEPDW	Corrugated Polyethylene Pipe Double Wall

(f) Joint Type Abbreviations:

T1	Type 1 Joint
T2	Type 2 Joint
T3	Type 3 Joint

(g) Quality Assurance for Pipe: Manufacturing plants will be periodically inspected for compliance with specified manufacturing methods, and material samples will be randomly obtained for laboratory testing for verification of manufacturing lots. Materials approved at the manufacturing plant will be subject to visual acceptance inspections at the jobsite or point of delivery.

701.03 EXCAVATION. For all pipe, when the sides of the trench are stable as evidenced by the sides of the trench being able to maintain a vertical cut face, the minimum trench width at the bottom of the excavation will be 18 inches (460mm) on either side of the outside diameter of the pipe. If the sides of the trench are unstable, the width of the trench at the bottom of the excavation, for plastic or metal pipe, shall be a minimum width of at least 18 inches (460mm) or one pipe diameter on each side of the outside diameter of the pipe, which ever is greater. Surplus material or excavated material that does not conform to the requirements of Subsection 203.06(a) shall be satisfactorily disposed of in accordance with Subsection 202.02. Moisture controls including backfill materials selection and dewatering using sumps, wells, well points or other approved processes may be necessary to control excess moisture during excavation, installation of bedding, over-excavated trench backfilling, pipe placement and pipe backfill.

(a) Over-excavation: When unsuitable soils as defined in Subsection 203.04 or a stable, non-yielding foundation cannot be obtained at the established pipe grade, or at the grade established for placement of the bedding, unstable or unsuitable soils below this grade shall be removed and replaced with granular material meeting the requirements of Subsection 1003.07,

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bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

When rock is encountered, it shall be removed below grade and replaced with material complying with Subsection 1003.07, bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. The compacted earth cushion shall have a thickness under the pipe of at least 1/2 inch per foot (40 mm/m) of fill height over the top of the pipe with a minimum thickness of 8 inches (200 mm). All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand operated compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

Materials used to backfill in an over-excavated portion of a trench do not require encasement in a Geotextile Fabric.

Density of approved materials placed in over-excavated trenches will not be measured or determined.

701.04 FORMING PIPE BED. Bedding material, when specified, shall be constructed in accordance with Section 726. Materials allowed for bedding shall be as specified in Subsection 1003.08 or may be Type A backfill materials. When bedding materials are specified, additional excavation shall be performed below established pipe grade and the bedding material placed in lifts not exceeding 8 inches (200 mm) thick and lightly compacted by hand or a dynamic hand compaction device over the surface of each lift.

When the bottom of the pipe is not laid in a trench but is constructed above natural soils, a uniform bed shall be constructed as specified for the bottom of a trench.

Density of approved bedding materials will not be measured or determined.

701.05 LAYING PIPE. Pipe laying shall begin at the downstream end of the line. The pipe shall be in contact with the foundation throughout its length. Bell or groove ends of pipe and outside circumferential laps of riveted metal pipe shall be placed facing upstream. Riveted seam metal pipe shall be placed with longitudinal laps at sides. Pipes in each continuous line shall have the same wall thickness. Metal pipes provided with lifting lugs shall be handled only by these lugs.

After pipe has been laid and before backfill is placed, the engineer will inspect the pipe for alignment, grade, integrity of joints, and coating damage.

701.06 JOINING PIPE.

(a) Joint Usage:

(1) Type 1 (T1) joints shall be used for side drains under drives and similar installations.

(2) Type 2 (T2) joints shall be used for cross drains under roadways, including turnouts.

(3) Type 3 (T3) joints shall be used for closed storm drain systems, flumes and siphons.

(b) Concrete Pipe: Concrete pipe may be either bell and spigot, or tongue and groove. The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

An approved mechanical pipe puller shall be used for joining pipes over 36 inches (900 mm) in diameter. For pipe 36 inches (900 mm) or less in diameter, any approved method for joining pipe may be used which does not damage the pipe.

Joints shall comply with Subsection 1006.05, and shall be sealed with gasket material installed in accordance with the manufacturer's recommendations.

(c) Metal Pipe: Metal pipe shall be firmly joined by coupling bands. Bands shall be centered over the joint.

For Type 1 joints, approved gasket material shall be placed in one corrugation recess on each side of the joint at the coupling band and on each band connection in such manner to prevent leakage.

When Type 2 or 3 joints are specified, joining of metal pipe sections shall conform to the following provisions:

(1) General: Band joints shall be sealed with gasket material. Gasket material shall be placed in accordance with the plan details.

(2) Circular Section: Connecting bands shall be of an approved design and shall be installed in accordance with plan details.

(3) Arch Section: Connecting bands shall be a minimum of 12 inches (300 mm) wide for pipe arch less than 36 inches (900 mm) round equivalent diameter, and a minimum of 21 inches (525 mm) wide for 36 inches (900 mm) round equivalent diameter pipe arch and greater. Bands shall be connected at the ends by approved angle or strap connections. Connecting bands used for 36 inches (900 mm) round equivalent diameter pipe arch and above shall be 2-piece bands.

(d) Plastic Pipe: Joints for plastic pipe shall be either bell and spigot or split coupling bands.

(1) Bell and Spigot Type Joint System: The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

Any approved method for joining pipe may be used which does not damage the pipe.

Joints shall be approved and shall be sealed with a gasket system utilizing gasket material complying with Subsection 1006.06(a).

(2) Split Coupling Type Joint System: Split coupling bands shall comply with all dimensional and material requirements of Subsection 1006.07. The bands shall be centered over the joint. The split coupling band shall be secured to the pipe with a minimum of five stainless steel or other approved corrosion resistant bands.

Joints shall be approved and shall be sealed with gasket material. Gasket material shall be placed in the first two corrugation recesses on each side of the pipe connections. Gasket material shall also be placed on each band connection to prevent leakage. When flexible plastic gasket material is used it shall be a minimum of 1/2 inch (13 mm) in size. The bands shall be tightened to create overlap of the band and shall adequately compress the gasket material.

(e) Connections: Approved connections shall be used when joining new pipes to existing pipes. When concrete collars are required in order to extend the ends of existing pipes that have been damaged or to join different types or sizes of pipes, the concrete collars shall be constructed in accordance with plan details, the applicable requirements of Section 901, and as directed.

(f) Geotextile Fabric, Pipe Joints: For concrete, metal and plastic pipes, Types 2 and 3 joints shall be wrapped with geotextile fabric for a minimum of 12 inches (300 mm) on each side of joint for pipe 36 inches (900 mm) or less in diameter and a minimum of 18 inches (450 mm) on each side of the joint for pipe greater than 36 inches (900 mm) in diameter. Ends of the fabric shall be lapped at least 10 inches (250 mm). The edges and ends of fabric shall be suitably secured for the entire circumference of the pipe.

701.07 RELAYING PIPE. If specified or directed, existing pipes shall be removed and suitable sections relaid as specified for new pipes.

701.08 BACKFILLING.

(a) General: Prior to backfilling, pipes found to be damaged or out of alignment or grade shall be removed and reinstalled, or replaced.

Type A backfill material shall be stone, recycled portland cement concrete, flowable fill, or RAP.

Type B backfill materials are selected soils. Where Type B backfill materials are called for, Type A backfill materials may be substituted.

When corrugated metal pipe is used, the backfill material shall be tested and shall have a resistivity greater than 1500 ohm-cm and a pH greater than 5 when tested in accordance with DOTD TR 429 and DOTD TR 430 respectively.

When Type A backfill material is used, geotextile fabric surrounding this backfill shall be placed in accordance with Subsection 726.03 between the aggregate backfill material and all other natural or placed soils in the trench or embankment. Care shall be taken to prevent damage to geotextile fabric during placement of backfill material. For concrete pipe, the fabric shall enclose not only the initial backfill but shall be wrapped over the top of the pipe with at least 12 inches (300 mm) of overlap.

When a trench box or trench sheeting is used in unstable soils and/or for worker safety, and when moved during backfilling operations, filling and additional compaction of the disturbed zone of backfill must take place immediately and in a manner acceptable to the engineer.

Initial backfill is a structural backfill encasing the pipe from the bottom of the pipe to the springline for concrete pipe and to a point one foot (0.3 m) above the top of the pipe for both metal and plastic pipe. Final backfill is not a structural backfill and shall extend from the top of the initial backfill to the top of the natural ground or subgrade in cut areas or to the top of existing ground in fill areas. Any fill required above the final backfill is considered and treated as embankment.

(b) Backfill Applications: For projects using A+B+C bidding method where rigid and flexible pavement alternates are considered, backfill application (2) below, "Cross Drains Under Flexible Pavements", shall apply for either rigid or flexible pavements.

(1) Under Concrete Pavements: Type B backfill may be used as initial and final backfill for all pipes, culverts or drains under concrete pavements. Placement and compaction shall be as specified in Heading (d) below.

(2) Cross Drains Under Flexible Pavements: All reaches, exclusive of those portions of the pipe which are under shoulders, of cross drains and all other culverts, pipes or drains that cross the centerlines of the new roadway or centerlines of existing roadways, such as intersections and are under flexible pavements shall receive an initial backfill of Type A material. Type B backfill materials may be used as final backfill for all pipes. Placement and compaction shall be as specified in Heading (c) and (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(3) Other Drains Under Flexible Pavements: All reaches of all culverts, pipes or drains under flexible pavements that do not cross the centerlines of new roadway or centerlines of existing roadways, and exclusive of those portions of the pipe which are totally under shoulders, shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(4) Other Areas: All culverts, pipes or drains in nonpaved areas or paved areas that serve as driveways or shoulders shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below.

(5) Pipes Subject to Construction Traffic; The embankment or pipe backfill shall be constructed to a minimum of 24 inches (600 mm) over the pipe before heavy construction equipment is allowed to cross the installation. Where practical, installations with less than 24 inches (600 mm) of cover over the top of the pipe shall be constructed after heavy hauling is completed over the pipe location. After completion of hauling operations, the contractor shall remove excess cover material. Pipe damaged by hauling and backfilling operations shall be removed and reinstalled, or replaced, at no direct pay.

(c) Placement and Compaction; Type A Backfill: For all pipes, culverts and conduits under paved and nonpaved areas, where Type A backfill material is used, the Type A backfill shall be thoroughly hand compacted under the pipe haunches and then dynamically compacted in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction under the haunches of the pipe shall initially be by hand tamping or other acceptable means, until a level is reached that the dynamic tamping can commence. Each lift shall be compacted by applying at least eight

passes of a hand operated, dynamic mechanical compaction device over the surface of each lift. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance. If flowable fill is used it shall be furnished, placed and consolidated in accordance with Section 710. The contractor shall control placement operations during initial backfill operations so as not to damage protective coatings on metal pipes. The contractor shall repair damaged coatings at no additional pay.

(d) Placement and Compaction; Type B Backfill: For all pipes, culverts and conduits, where Type B backfill is allowed, the Type B material shall be placed in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction shall be with suitable mechanical equipment. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance.

(e) Placement and Compaction; Trenchless or Partial Trench Condition: All pipes, culverts, drains and conduits placed with any portion of the pipe above existing ground must also comply with Subsections (a),(b) (c) and (d) above for the portion of the pipe within a trench and that portion of the pipe not constructed in a trench. The width of initial and final backfill of that portion above existing ground and not within a trench will be constructed to such a width that the requirements for placement, compaction and density are met.

(f) Density Requirements: The in place density of Type A backfill materials and bedding materials, will not be measured or determined. Type A backfill, exclusive of RAP and flowable fill, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or 418. RAP materials shall be placed and compacted in a slightly moist condition.

The maximum dry density of initial or final Type B backfill under all paved areas which are to be under traffic will be determined in accordance with DOTD TR 415 or TR 418 and in-place density determined in accordance with DOTD TR 401. Initial and final Type B backfill under all paved areas, under traffic, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418. Each layer shall be compacted by approved methods prior to the placement of a subsequent layer. The engineer will approve the compaction method based upon validation that such method, including moisture control, will achieve at least 95 percent of maximum dry density as determined in accordance with DOTD TR 401. With approval of the engineer, density testing may be waived on subsequent layers with backfill installation in accordance with approved compaction methods and continued satisfactory performance.

Initial and final backfill in unpaved areas or paved areas such as shoulders or driveways, shall be placed evenly and compacted along the length of the culvert, pipe or drain from the top of the initial backfill to the top of the subgrade. Layered backfill shall be compacted at least to the density of the adjoining existing soils or the compaction required of the laterally adjoining layers of soil immediately outside the trench for embankment elevations. Initial and final backfill shall be placed and compacted at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418.

701.09 INSPECTION OF PIPES. After completion of embankment and prior to roadway surfacing, the engineer shall inspect pipes for proper alignment and integrity of joints. Any misaligned pipe or defective joints shall be corrected by the contractor at no direct pay.

(a) Plastic Pipe: Installed plastic pipe shall be tested to ensure that vertical deflections do not exceed 5.0 percent. Maximum allowable deflections shall be governed by the mandrel requirements stated herein.

Deflection tests shall be performed no sooner than 30 calendar days after installation and compaction of backfill. The pipe shall be cleaned and inspected for offsets and obstructions prior to testing.

For pipe 36 inches (900 mm) and less in diameter, a mandrel shall be pulled through the pipe by hand to ensure that maximum allowable deflections have not been exceeded. The mandrel shall be approved by the engineer prior to use. Use of an unapproved mandrel or a mandrel altered or modified after approval will invalidate the test. If the mandrel fails to pass, the pipe is overdeflected.

Unless otherwise permitted, overdeflected pipe shall be uncovered and, if not damaged, reinstalled. Damaged pipe shall not be reinstalled, but shall be removed and replaced with new pipe. Any pipe subjected to any method or process other than removal, which attempts, even successfully, to reduce or cure any overdeflection, shall be removed and replaced with new pipe.

The mandrel shall be a rigid, nonadjustable, odd-numbered legged (minimum 9 legs) mandrel having a length not less than its nominal diameter or 24 inches (600 mm), whichever is less. The minimum diameter at any point shall be 5.0 percent less than the base inside diameter of the pipe being tested. The mandrel shall be fabricated of steel, aluminum or other approved material fitted with pulling rings at each end. The nominal pipe size and outside diameter of the mandrel shall be stamped or engraved on some segment other than a runner. A suitable carrying case shall be furnished.

For pipe larger than 36 inches (900 mm) in diameter, deflection shall be determined by a method approved by the engineer. If a mandrel is selected, the minimum diameter, length, and other requirements shall conform to the above requirements.

Mandrel testing shall be conducted by the contractor in the presence of the engineer. Mandrel testing shall be at no direct pay.

(b) Metal Pipe: If the inside diameter of metal pipe or rise dimension of metal pipe arch deflects more than 5.0 percent from original dimensions, they shall be removed and reinstalled, unless they do not rebound or are damaged. Pipe or pipe arch which are damaged or do not rebound shall be removed and replaced at no direct pay. Measurement of deflection will be made by the engineer away from rerolled ends.

701.10 CLEANING PIPES.

(a) Existing Pipes: Pipes designated to be cleaned shall be cleaned of soil, debris and other materials to the invert of the pipe. Designated pipes shall be cleaned by approved methods that will not damage the pipes. Any damage caused by the contractor's operations shall be satisfactorily repaired at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

(b) Contractor Installed Pipes: Prior to final acceptance, pipes shall be cleaned of all debris and soil to the invert of the pipe at no direct pay.

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Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

701.11 STUBBING AND PLUGGING PIPES. When it is required that pipes be plugged, such plugs shall be constructed of Class R concrete complying with Section 901. Thickness of plug and method of construction shall be as directed.

When new pipes are to be stubbed into new or existing pipes or other structures, the connection shall be made with approved mortar complying with Subsection 702.02.

701.12 MEASUREMENT. Pipe, both new and relaid, will be measured in linear feet (lin m) as follows unless stated otherwise.

(a) Pipe not confined by fixed structures will be measured by the number of joints at the nominal length of each joint.

(b) Pipe confined by fixed structures will be measured along the pipe between the termini of pipe in structure walls.

(c) Pipe confined by a fixed structure on one end and unconfined at the other end will be measured along the pipe from the terminus of pipe in the structure wall to the unconfined end of pipe.

(d) Fabricating of pipe tees, elbows and other fittings will be measured per each fitting. The length of pipe in such fittings will be included in the pay length measurement of pipes of which they form a part.

(e) Excavation required for installation of pipes will not be measured for payment, except as otherwise specified in Subsection 203.14.

(f) Furnishing and placing backfill material below existing ground level for pipes will not be measured for payment. Backfill material needed to complete backfill above natural ground and around pipes that extend above natural ground will be measured and payment will be made under applicable earthwork items. When specified, flowable fill will be measured and paid for in accordance with Section 710.

(g) Plugging and stubbing of pipes will not be measured for payment.

(h) Cleaning existing pipes will be measured by the length of pipe cleaned and accepted.

(i) Concrete collars will be measured per each.

701.13 PAYMENT.

(a) Payment for pipe will be made at the contract unit price per linear foot (lin m) of the types and sizes specified.

When plastic pipe is specified on the plans or elected to be used by the contractor, payment will be made at the contract unit price per linear foot (lin m) of the types and sizes specified in accordance with the payment schedule of Table 701-1.

Table 701-1
Payment Schedule for Plastic Pipe

Percent Payment	Stage of Completeness
75	After placement and backfill has been completed
25	After the pipe has met vertical deflection requirements in accordance with Subsection 701.09(a)

(b) Payment for fabricating pipe tees, elbows and other fittings will be made at the contract unit price per each fitting.

(c) When unstable conditions are encountered, the additional excavation will not be measured for payment; however, the additional materials furnished and placed for the pipe foundation will be measured and paid for as follows:

(1) Granular Materials: Payment will be made under the embankment item. The net section volume of the materials will be multiplied by 3 to determine the pay volume. When the contract does not include a pay item for embankment, payment will be made in accordance with Subsection 104.02.

(2) Bedding Material: Measurement and payment will be made in accordance with Section 726. When the contract does not include a pay item for bedding material, payment will be made in accordance with Subsection 104.02.

(d) Payment for cleaning existing pipes will be made at the contract unit price per linear foot (lin m).

(e) Payment for concrete collars will be made at the contract unit price per each.

Payment will be made under:

Item No.	Pay Item	Pay Unit
701-01	Cross Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-02	Cross Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-03	Storm Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-04	Storm Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-05	Side Drain Pipe (Size)	Linear Foot (Lin m)
701-06	Side Drain Pipe Arch (Size)	Linear Foot (Lin m)
701-07	Yard Drain Pipe (Size)	Linear Foot (Lin m)
701-08	Relaying Pipe	Linear Foot (Lin m)
701-09	Fabricating Pipe Fittings	Each
701-10	Reinforced Concrete Pipe (Extension)	Linear Foot (Lin m)
701-11	Reinforced Concrete Pipe Arch (Extension)	Linear Foot (Lin m)
701-12	Corrugated Metal Pipe (Extension)	Linear Foot (Lin m)
701-13	Corrugated Metal Pipe Arch (Extension)	Linear Foot (Lin m)

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701-14	Cleaning Existing Pipes	Linear Foot (Lin m)
701-15	Concrete Collar	Each
701-16	Plastic Pipe (Extension)	Linear Foot (Lin m)

SECTION 704 – GUARD RAIL:

Subsection 704.03 – General Construction Requirements (01/05), Pages 368 and 369.

Add the following to Heading (d), Guard Rail End Treatments.

All end treatments shall bear a label indicating the manufacturer and exact product name of the end treatment along with its assigned NCHRP 350 test level. This label shall resist weathering and shall be permanently affixed to the railing in such a way as to be readily visible.

SECTION 706 – CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING:

All Subsections within Section 706 (04/08), Pages 375 – 377.

Delete Section 706, Concrete Walks, Drives and Incidental Paving and substitute the following.

SECTION 706 CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING

706.01 DESCRIPTION. This work consists of furnishing and constructing portland cement concrete walks, handicapped curb ramps, drives and incidental paving slabs in accordance with these specifications and in conformity with lines, grades and dimensions shown on the plans or established.

706.02 MATERIALS. Materials shall comply with the following Section or Subsections.

Portland Cement Concrete (Class M)	901
Joint Filler	1005.01(c)
Reinforcing Steel	1009.01
Curing Materials	1011.01

706.03 CONSTRUCTION REQUIREMENTS.

(a) **Excavation:** Excavation shall be made to required depth and width. The top of the subgrade shall be shaped and compacted to a firm, even surface conforming to the section shown on the plans. Unsuitable material shall be removed and disposed of in accordance with Subsection 202.02 and replaced with approved material at no direct pay.

(b) **Forms:** Forms shall be of wood or metal and shall extend the full depth of concrete. Forms shall be straight, clean and of sufficient strength to resist the pressure of concrete. Bracing of forms shall be such that forms remain in horizontal and vertical alignment until their removal.

Concrete may be placed by slip-form methods. Slip-formed concrete shall be placed with an approved machine designed to spread, vibrate, consolidate and finish concrete in one pass of the machine in such manner that minimum hand finishing is necessary. Sliding forms shall be

rigidly held together to prevent spreading of forms. After the passing of the side forms there shall be no noticeable slumping of concrete.

(c) Subgrade: The subgrade shall be thoroughly moistened immediately prior to placing concrete.

(d) Placing and Finishing: Concrete shall be placed on the subgrade, struck off to required thickness and tamped sufficiently to bring the mortar to the surface. The surface shall be finished with a wood float or steel trowel followed by brushing to a slightly rough finish. Joints and edges shall be rounded with an edging tool having a 1/4-inch (6 mm) radius.

(e) Joints:

(1) Expansion Joints: Expansion joints shall be filled with 1/2 inch (13 mm) thick preformed expansion joint filler. Expansion joints shall be installed at maximum 100-foot (30 m) intervals, and between intersecting paving and any fixed structure such as a building, bridge or curbing, and between intersecting paving and the handicapped curb ramps. Expansion joint material shall extend for the full width and depth of paving.

(2) Weakened Plane: Weakened planes shall be formed by a jointing tool or other acceptable means. Weakened planes shall extend into concrete for at least 1/4 of the depth and shall be approximately 1/8 inch (3 mm) wide.

a. Walks: Spacing of weakened planes for walks shall be equal to the width of walk.

b. Drives: A longitudinal weakened plane shall be formed along the centerline of drives more than 16 feet (5 m) wide, and transverse weakened planes shall be formed at not more than 16-foot (5 m) intervals.

c. Incidental Paving: Weakened planes for incidental paving shall be formed at intervals not exceeding 30 times the thickness of the concrete in length or width. Incidental paving poured adjacent to jointed concrete shall be jointed to match existing joints, with intermediate joints formed as necessary not to exceed the maximum joint spacing.

(3) Construction Joints: Construction joints shall be formed around manholes, utility poles, etc., extending into paving and 1/4 inch (6 mm) thick preformed expansion joint filler shall be installed in these joints.

(4) Tie-ins: Tie-ins of existing concrete shall be made by full depth sawing at no direct pay.

(f) Curing: Concrete shall be cured in accordance with Subsection 601.10.

(g) Detectable Warning Surface for Handicap Ramps and At-Grade Sidewalk Intersections: Sidewalks, when intersecting with roadways, shall be equipped with a detectable warning surface system consisting of raised truncated domes as a transition between the sidewalk and the street as required by the Americans with Disabilities Act, 28 CFR Part 36, ADA Standards for Accessible Design.

Detectable warnings (truncated domes) shall be installed on the ramp surface over the full width of the ramp throat for a distance of 24 inches (600 mm) in the direction of travel from the back of the curb. Detectable warnings (truncated domes) shall also be installed on at-grade sidewalks intersecting with roadways for a distance of 36 inches (900 mm) in the direction of travel from the end of the sidewalk. Truncated domes shall be laid out on a square grid in order to allow enough space for wheelchairs to roll between the domes.

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Light reflectance of the truncated domes and the underlying surface must meet the 70 percent contrast requirement of ADAAG.

706.04 MEASUREMENT. Quantities of concrete walks, drives and incidental paving slabs for payment will be the design quantities as specified on the plans and adjustments thereto. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if design errors are proven or if design changes are made. Design areas are based on the horizontal dimensions shown on the plans. Excavation, backfill, reinforcing steel and joint materials will not be measured for payment.

Handicapped curb ramps, including the detectable surface warning system, will be measured per each.

Detectable surface warning systems for at-grade sidewalk intersection will not be measured for payment.

706.05 PAYMENT. Payment for concrete walks, drives and incidental paving will be made on a lot basis at the contract unit price per square yard (sq m), adjusted in accordance with the following provisions. Payment for each lot will be made in accordance with Table 901-6. Size, sampling, and testing of each concrete lot shall be in accordance with the Materials Sampling Manual.

Payment for handicapped curb ramps, including the detectable surface warning system, will be made by each and shall include, but not limited to, curb transitions, detectable warning system, gutter, landing and base.

Payment will be made under:

Item No.	Pay Item	Pay Unit
706-01	Concrete Walk (inch (mm) Thick)	Square Yard (Sq m)
706-02	Concrete Drive (inch (mm) Thick)	Square Yard (Sq m)
706-03	Incidental Concrete Paving (inch (mm) Thick)	Square Yard (Sq m)
706-04	Handicapped Curb Ramps	Each

SECTION 713 – TEMPORARY TRAFFIC CONTROL:

Subsection 713.06 – Pavement Markings (08/06), Pages 400 – 403.

Delete Table 713-1, Temporary Pavement Markings and substitute the following.

Table 713-1
Temporary Pavement Markings^{1,2}

		Two-lane Highways	Undivided Multilane Highways	Divided Multilane Highways
S H O R T T E R M	ADT<1500; or ADT>1500 and time<3 days	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers; with "Do Not Pass" and "Pass With Care" signs as required		
	ADT>1500; Time>3 days and<2 weeks	Lane lines 4-foot (1.2-m) tape on 40-foot (12-m) centers with no passing zone markings		
	All ADT's with time <2 weeks		Lane lines 4-foot (1.2m) tape on 40-foot (12 m) centers; double yellow centerline	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers
L O N G T E R M	All ADT's with time >2 weeks	Standard lane lines, no-passing zone markings, legends and symbols and when pavement width is 22 feet (6.7 m) or greater, edge lines	Standard lane lines, centerlines, edge lines, and legends and symbols	Standard lane lines, centerlines, edge lines, and legends and symbols.

¹No-passing zones shall be delineated as indicated whenever a project is open to traffic.

²On all Asphaltic Surface Treatments that are open to traffic and used as a final wearing course or as an interlayer, temporary pavement markings (tabs) on 20-foot (6 m) centers shall be used, in lieu of the 4-foot (1.2 m) tape, on 40-foot (12 m) centers.

SECTION 729 – TRAFFIC SIGNS AND DEVICES:

Subsection 729.02 – Materials (04/08), Pages 456 and 457.

Delete the contents of Heading (a), Sign and Marker Sheeting, and substitute the following.

(a) Sign and Marker Sheeting: Sheeting material for sign panels, delineators, barricades and other markers shall comply with Section 1015. All permanent signs shall meet the requirements of ASTM D 4956, Type X.

Subsection 729.04, Fabrication of Sign Panels and Markers (04/08), Pages 458 – 460.

Delete the third paragraph of Heading (c), Sheeting Application and substitute the following.

ASTM D 4956 Type X reflective sheeting shall be applied with an orientation determined by the engineer to obtain the optimum entrance angle performance. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will be allowed only when the horizontal dimension of the sign face or attached shield is in excess of the maximum manufactured width of the sheeting. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will also be allowed when the specified orientation will create excessive sheeting waste.

SECTION 804 – DRIVEN PILES:

Subsection 804.08 – Construction Requirements (04/07), Pages 548 – 554.

Delete the first sentence of Heading (a), Preboring and substitute the following.

Preboring by augering, wet-rotary drilling, or other methods used to facilitate pile driving will not be permitted unless specified in the plans or allowed by the engineer.

Delete the first sentence of Heading (b), Jetting and substitute the following.

Jetting will not be permitted unless allowed in the plans or allowed by the engineer.

SECTION 901 – PORTLAND CEMENT CONCRETE:

Subsection 901.06 – Quality Control of Concrete (08/06), Pages 726 – 731.

Add the following to the contents of Heading (b), Quality Control Tests.

The contractor shall be responsible for monitoring the components (cement, mineral and chemical admixtures, aggregates) in their mix to protect against any changes due to component variations. As component shipments arrive, the contractor shall verify slump, air content and set time by testing at ambient temperatures. The contractor shall make adjustments to the mix design to rectify any changes which would adversely affect constructability, concrete placement or the specifications. The contractor shall submit test results to the Department for review each day of paving. Testing to validate component consistency will be documented on the control logs. Conformance or variation in mix parameters (workability, set times, air content, etc.) shall be noted on the control logs. The contractor shall provide a copy of the proposed testing plan to the engineer for record. Acceptance of the plan does not relieve the contractor's responsibility for consistency.

Subsection 901.08 – Composition of Concrete (12/05), Pages 732 – 734.

Add the following to Heading (a).

The blended cement containing up to 50 percent of grade 100 or grade 120 ground granulated blast-furnace slag must be in compliance with Subsection 1001.04 for portland blast-furnace slag cement.

SECTION 1001 – HYDRAULIC CEMENT:

Subsection 1001.01 – Portland Cement (09/07). Page 749.

Delete the contents of this subsection and substitute the following.

1001.01 PORTLAND CEMENT. Portland cement shall be from an approved source listed in QPL 7 and shall comply with AASHTO M 85.

Alkali content calculated as sodium oxide equivalent shall not exceed 0.60 percent by weight for all types of cement.

SECTION 1003 – AGGREGATES:

Subsection 1003.02 – Aggregates for Portland Cement Concrete and Mortar (07/07),

Pages 763 – 766.

Delete the contents of Heading (c), Aggregates for Types B and D Pavements, and substitute the following.

(c) Aggregates for Types B and D Pavements: For the combined aggregates for the proposed portland cement concrete pavement mix, the percent retained based on the dry weight (mass) of the total aggregates shall meet the requirements of Table 1003-1A for the type of pavement specified in the plans. Additionally, the sum of the percents retained on any two adjacent sieves so designated in the table shall be at least 12 percent of the total combined aggregates. The maximum amounts by weight (mass) of deleterious materials for the total aggregate shall be the same as shown in Subsection 1003.02(b).

Table 1003-1A
Aggregates for Types B and D Pavements

U.S. Sieve	Metric Sieve	Percent Retained of Total Combined Aggregates	
		Pavement Type	
		Type B	Type D
2 1/2 inch	63 mm	0	0
2 inch	50 mm	0	0-20
1 1/2 inch	37.5 mm	0-20	0-20
1 inch	25.0 mm	0-20	5-20
3/4 inch	19.0 mm	5-20	5-20
1/2 inch	12.5 mm	5-20	5-20
3/8 inch	9.5 mm	5-20	5-20
No. 4	4.75 mm	5-20	5-20
No. 8	2.36 mm	5-20	5-20
No. 16	1.18 mm	5-20	5-20
No. 30	600 µm	5-20	5-20
No. 50	300 µm	0-20	0-20
No. 100	150 µm	0-20	0-20
No. 200	75 µm	0-5	0-5

Note: For the sieves in the shaded areas, the sum of any two adjacent sieves shall be a minimum of 12 percent of the total combined aggregates.

Each type of aggregate to be used in the proposed mixture shall be sampled and tested individually. The percent of total combined aggregates retained shall be determined mathematically based on the proportions of the combined aggregate blend. All gradation calculations shall be based on percent of dry weight (mass).

SECTION 1005 – JOINT MATERIALS FOR PAVEMENTS AND STRUCTURES:

Subsection 1005.04 – Combination Joint Former/Sealer (11/05), Pages 782 and 783.

Delete Heading (a) and substitute the following.

(a) Description: This joint former/sealer is intended for use in simultaneously forming and sealing a weakened plane in portland cement concrete pavements.

The material shall consist of an elastomeric strip permanently bonded either mechanically or chemically at the top of each of two rigid plastic side frames and covered with a removable plastic top cap. Side frames shall be of such configuration that when the sealer is inserted into plastic concrete and vibrated, a permanent bond forms between side frames and concrete.

Delete Heading (b)(1) and substitute the following.

(1) Elastomer: The elastomer strip portion of the material shall be manufactured from vulcanized elastomeric compound using polymerized chloroprene or thermoplastic vulcanizate as the base polymer, and shall comply with the following requirements:

<u>Property</u>	<u>ASTM Test Method</u>	<u>Requirements</u>	
		<u>Polymerized Chloroprene</u>	<u>Thermoplastic Vulcanizate</u>
Tensile Strength, kPa, Min.	D 412	12,400	7,400
Elongation at Break, % Min.	D 412	200	400
Hardness, Shore A	D 2240	65 ± 10	65 ± 10
Properties after Aging, 70 h @ 100°C	D 573		
Tensile Strength, % Loss, Max.		20	20
Elongation, % loss, Max.		25	25
Hardness, pts. increase, Max.		10	10
Ozone Resistance, 20% strain or bentloop, 300 pphm in air, 70 h @ 40°C	D 1149	no cracks	no cracks
Oil Swell, IRM 903, 70 h @ 100°C, wt change, % Max.	D 471	45	75

Delete Headings (b)(2) and (b)(3) and substitute the following:

(2) Bond of Elastomer to Plastic: The force required to shear the elastomer from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

(3) Bond of Plastic to Cement Mortar: This bond will be evaluated and shall meet the following requirements:

The force required to separate the cement mortar from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

SECTION 1006 – CONCRETE AND PLASTIC PIPE:

Subsection 1006.09 – Plastic Yard Drain Pipe (06/07), Page 789.

Delete the contents of Subheading (a)(3), Ribbed Polyvinyl Chloride Pipe (RPVCP) and substitute the following.

Ribbed Polyvinyl Chloride Pipe (RPVCP): Ribbed Polyvinyl Chloride Pipe shall comply with ASTM F 794, Series 46 or ASTM F 949 (46 psi).

SECTION 1013 – METALS:

Subsection 1013.09 – Steel Piles (08/06) Page 822.

Delete the title and references to “Steel Piles” in this subsection and substitute “Steel H Piles”.

SECTION 1015 – SIGNS AND PAVEMENT MARKINGS:

Subsection 1015.04 – Sign Panels (05/07), Pages 832 and 833.

Delete the contents of Heading (a), Permanent Sign Panels and substitute the following.

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(a) Permanent Sign Panels: Flat panels shall be aluminum sheets or plates complying with ASTM B 209, Alloy 6061-T6 or Alloy 5052-H38. Extruded aluminum panels shall comply with ASTM B 221 (ASTM B 221M), Alloy 6063-T6 and after fabrication, have a flatness equal to or less than 0.031 inch per foot of length and 0.004 inch per inch of width.

Subsection 1015.05 - Reflective Sheeting (04/08), Pages 833 – 838.

Delete the contents of this subsection and substitute the following.

1015.05 REFLECTIVE SHEETING.

(a) Permanent and Temporary Standard Sheeting: Reflective sheeting shall be one of the following standard types as specified on the plans and complying with ASTM D 4956 except as modified herein. Permanent warning, regulatory, guide and supplemental guide sign sheeting shall meet the requirements of ASTM D 4956 Type X. Reflective sheeting for temporary signs and devices shall meet the requirements of ASTM D 4956 Type III except as noted in Subsection 1015.05(f). Reflective sheeting shall be an approved product listed in QPL 13.

Type III - A high-intensity retroreflective sheeting that is typically encapsulated glass-bead retroreflective material.

Type VI - An elastomeric high-intensity retroreflective sheeting without adhesive. This sheeting is typically a vinyl microprismatic retroreflective material.

Type X - A super high-intensity retroreflective sheeting having highest retroreflectivity characteristics at medium distances. This sheeting is typically an unmetalized microprismatic retroreflective element material.

(b) Fluorescent Pink Retroreflective Sheeting: Signs for temporary control of traffic through incident management areas shall be Type VI fluorescent pink retroreflective sheeting and shall comply with the MUTCD. Temporary traffic control signs for incident management shall be placed to notify motorists of upcoming incidents on the roadway, and shall be removed from public view once the incident has been managed. Physical properties shall comply with ASTM D 4956. Photometric properties shall be as follows.

(1) Retroreflectivity: Minimum Coefficients of Retroreflection shall be as specified in Table 1015-1.

Table 1015-1
Coefficients of Retroreflection for Fluorescent Pink Sheeting¹

Observation Angle, degrees	Entrance Angle, degrees	Fluorescent Pink
0.2	-4	100
0.2	+30	40
0.5	-4	40
0.5	+30	15

¹Minimum Coefficient of Retroreflection (R_A) ($\text{cd lx}^{-1}\text{m}^{-2}$)

(2) Color and Daytime Luminance: Color Chromaticity Coordinates and Daytime Luminance Factors shall be as specified in Table 1015-2.

Table 1015-2
Fluorescent Pink Color Specifications Limits (Daytime)

Chromaticity Coordinates (corner points) ¹								Luminance Factor, min.
1		2		3		4		Y%
x	y	x	y	x	y	x	y	25
0.450	0.270	0.590	0.350	0.644	0.290	0.536	0.230	

¹The four pairs of chromaticity coordinates measured with CIE 2° Standard Observer and 45/0 (0/45) geometry and CIE D65 Standard Illuminant.

(c) Adhesive Classes: The adhesive required for retroreflective sheeting shall be Class 1 (pressure sensitive) as specified in ASTM D 4956.

(d) Accelerated Weathering: Reflective sheeting, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform in accordance with the accelerated weathering standards in Table 1015-3.

Table 1015-3
Accelerated Weathering Standards¹

Type	Retroreflectivity ²				Colorfastness ³	
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		Orange/ Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	1 year	80 ⁴	3 years	80 ⁴	1 year	3 years
III (for drums)	1 year	80 ⁴	1 year	80 ⁴	1 year	1 year
VI	1/2 year	50 ⁵	1/2 year	50 ⁵	1/2 year	1/2 year
X	1 year	80 ⁶	3 years	80 ⁶	1 year	3 years

¹At an angle of 45° from the horizontal and facing south in accordance with ASTM G 7 at an approved test facility in Louisiana or South Florida.

²Percent retained retroreflectivity of referenced table after the outdoor test exposure time specified.

³Colors shall conform to the color specification limits of ASTM D 4956 after the outdoor test exposure time specified.

⁴ASTM D 4956, Table 8.

⁵ASTM D 4956, Table 13.

⁶ASTM D 4956, Table 4.

(e) Expected Sign Life Data and Performance: The sheeting manufacturer shall supply expected retroreflectivity service life curves for each of the following sign sheeting colors: white, green, blue, brown, red, and yellow. The service life curves shall be plots of the 95 percent expected life plotted on an x-y graph with life years on the x-axis and retroreflectivity on the y-axis. The expected life shall account for worst case installations, equivalent to an installation in South Louisiana with the sign facing to the South. The sheeting manufacturer shall also supply a table of expected life values taken from the service life curves for Revision Number 2 to the 2003 Edition of the MUTCD minimum reflectivity requirements published in the Federal Register on December 21, 2007. Reflective sheeting for signs, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform outdoors in accordance with the performance standards in Table 1015-4.

Table 1015-4
 Reflective Sheeting Performance Standards

Type	Retroreflectivity ¹ -- Durability ²				Colorfastness ³
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		
III	3 years	80 ⁴	10 years	80 ⁴	3 years
X	3 years	80 ⁵	7years	80 ⁵	3 years

¹Percent retained retroreflectivity of referenced table after installation and the field exposure time specified.

²All sheeting shall maintain its structural integrity, adhesion and functionality after installation and the field exposure time specified.

³All colors shall conform to the color specification limits of ASTM D 4956 after installation and the field exposure time specified.

⁴ASTM D4956, Table 8.

⁵ASTM D 4956, Table 4.

(f) Temporary Signs, Barricades, Channelizing Devices, Drums and Cones: Reflective sheeting for temporary signs, barricades and channelizing devices, shall meet the requirements of ASTM D 4956, Type III except that temporary warning construction signs used on the mainline of freeways and expressways shall be fluorescent orange and meet the requirements of ASTM D 4956, Type X.

Reflective sheeting for vertical panels shall meet the requirements of ASTM D 4956, Type III.

Reflective sheeting for drums shall be a minimum of 6 inches (150 mm) wide and shall meet the requirements of ASTM D 4956, Type III, and the Supplementary Requirement S2 for Reboundable Sheeting as specified in ASTM D 4956. Reflective sheeting for traffic cone collars shall meet the requirements of ASTM D 4956, Type III or Type VI.

(g) Sheeting Guaranty. The contractor shall provide the Department with a guaranty from the sheeting manufacturer stating that if the retroreflective sheeting fails to comply with the performance requirements of this subsection, the sheeting manufacturer shall do the following:

Table 1015-5
Manufacturer's Guaranty-Reflective Sheeting

Type	Manufacturer shall restore the sign face in its field location to its original effectiveness at no cost to the Department if failure occurs during the time period ¹ as specified below		Manufacturer shall replace the sheeting required to restore the sign face to its original effectiveness at no cost to the Department if failure occurs during the time period ¹ as specified below
	Orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	<3 years	<7 years	7-10 years
X	<3 years	<5 years	5-7 years

¹ From the date of sign installation.

Replacement sheeting for sign faces, material, and labor shall carry the unexpired guaranty of the sheeting for which it replaces.

The sign fabricator shall be responsible for dating all signs with the month and year of fabrication at the time of sign fabrication. This date shall constitute the start of the guaranty obligation period.

Subsection 1015.11 - Preformed Plastic Pavement Marking Tape (06/07), Pages 842 – 844.

Delete the contents of this subsection and substitute the following.

1015.11 PREFORMED PLASTIC PAVEMENT MARKING TAPE.

(a) General: Preformed plastic pavement marking tape shall be approved products listed on QPL 64 and shall comply with ASTM D4505 Retroreflectivity Level I or Level II, or DOTD Intersection Grade (as specified below), except as modified herein. The marking tape shall be Class 2 or 3. The type and color shall be in accordance with the plans and the MUTCD.

(b) Thickness: All preformed plastic pavement marking tape shall have a minimum overall thickness of 0.060 inches (1.5 mm) when tested without the adhesive.

(c) Friction Resistance: The surface of the Retroreflectivity Level II preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 35 British Polish Number (BPN) when tested according to ASTM E303. The surface of the Retroreflectivity Level I and DOTD Intersection Grade preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 45 BPN when tested according to ASTM E303. Values for the Retroreflectivity Level I material with a raised surface pattern as defined in ASTM D4505 are calculated by averaging values taken at downweb and at a 45 degrees angle from downweb.

(d) Retroreflective Requirements: The preformed plastic pavement marking tape shall have the minimum initial specific luminance values shown in Table 1015-7 when measured in accordance with ASTM D 4061.

Table 1015-7
Specific Luminance of Preformed Plastic Tape

Type	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
Retroreflectivity Level I	1.05	88.76	500	300
DOTD Intersection Grade	1.05	88.76	375	250
Retroreflectivity Level II	1.05	88.76	250	175

(e) Durability Requirements: The DOTD Intersection Grade preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 12 months after placement when placed in accordance with the manufacturer's recommended procedures on pavement surfaces having a daily traffic count not to exceed 15,000 ADT per lane.

The Retroreflectivity Level I preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 4 years after placement for longitudinal lines and at least 2 years after placement for symbols and legends.

The Retroreflectivity Level I preformed plastic pavement marking tape shall also retain the following reflectance values for the time period detailed in Table 1015-8.

Table 1015-8
Retained Specific Luminance for Retroreflectivity Level I
Preformed Plastic Pavement Marking Tape

Time	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
1 year	1.05	88.76	400	240
4 years (2 years for symbols and legend)	1.05	88.76	100	100

(f) Plastic Pavement Marking Tape Guaranty (DOTD Intersection Grade and Retroreflectivity Level I): If the plastic pavement marking tape fails to comply with the performance and durability requirements of this subsection within 12 months for DOTD Intersection Grade and 4 years for Retroreflectivity Level I, the manufacturer shall replace the plastic pavement marking material at no cost to the Department.

SECTION 1020 – TRAFFIC SIGNALS:

Subsection 1020.01 – Traffic Signal Heads (06/07), Pages 873 – 884.

Delete the contents of Heading (a), General Requirements and substitute the following.

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(a) General Requirements: Traffic signal sections, beacon sections and pedestrian signal sections shall be of the adjustable type. Materials and construction of each section shall be the same.

Signals shall be constructed for either 8 or 12-inch (200 mm or 300 mm) lens in accordance with the plans. Signal sections shall have three to five sections per face and beacon sections have only one section per face. Signal sections and associated brackets shall be finished inside and out with two coats of high grade dark olive green enamel, color number 14056 according to Federal Standard No. 595b with each coat independently baked. Visors shall be coated green on the outside and black on the inside. Edges shall be deburred and smooth with no sharp edges.

Subsection 1020.04 – Poles for Traffic Signal Systems (06/07), Pages 890 – 894.

Delete the sixth paragraph of Heading (a), Pedestal Support Signal Poles, and substitute the following.

Pedestals shall be finished with at least one coat of rustproofing primer, applied to a clean surface and one coat of dark olive green enamel, color number 14056 according to Federal Standard No. 595.

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS**

**SECTION 741
WATER DISTRIBUTION SYSTEM**

The 2006 Standard Specifications are amended to include this Section 741.

741.01 DESCRIPTION: This work consists of furnishing the necessary materials and installing, relocating and adjusting water distribution systems in accordance with these specifications and in conformity with the lines and grades shown on the plans or established by the engineer.

741.02 MATERIALS: A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required for each item.

(a) Cast Iron and Ductile Iron Pipe:

(1) Cast Iron Pipe: Cast iron pipe shall be made of grey cast iron and shall conform to ANSI A 21.6 (centrifugally cast in metal molds) or A 21.8 (centrifugally cast in sand lined molds). Iron in the pipe shall have a bursting tensile strength of at least 21,000 psi (145 MPa) and the pipe shall have a ring modulus of rupture of at least 45,000 psi (310 MPa).

(2) Ductile Iron Pipe: Ductile iron pipe shall consist of ductile cast iron and shall conform to ANSI A 21.51 (centrifugally cast in metal or sand lined molds).

(3) Fittings: Fittings for cast iron or ductile iron pipe shall conform to ANSI A 21.10.

(4) Coating and Lining of Pipe: Cast iron and ductile iron pipe and fittings shall be asphalt or vinyl coated outside, as specified, and cement lined and seal coated inside in accordance with ANSI A 21.4.

(5) Joints: Pipe joints shall conform to ANSI A 21.11 with the following criteria used for joint selection.

- a. Mechanical Joint (Type III) with alloy steel bolts and nuts.
- b. Boltless single gasket push-on joint.
- c. Submarine, flexible, ball and socket joint.
- d. Flanged joint.

Pipe shall be installed with joint types (a) or (b) for mains under normal service conditions, joint type (c) for stream or canal crossings and when specified, joint type (d) for above ground installations such as pumps.

(b) Gate Valves and Valve Boxes:

(1) Valves shall be non-rising stem, iron body, bronze mounted, double-disk gate valves conforming to AWWA C 500. Valves shall have mechanical joint ends except that valves used with 2 inches (50 mm) or less diameter pipe, or galvanized iron pipe, shall have threaded ends. Valves shall open counterclockwise and shall be operated by nut method. Operating nuts shall conform to that used by the utility system.

(2) Valve boxes shall be approved cast iron, 2-piece, heavy roadway type. Valve boxes for 12 inches (300 mm) or larger valves shall be of the 3-piece type with oval base. The term "water" shall be cast on each valve box cover.

(c) Tapping Sleeves and Valves: Tapping sleeves shall be the split- sleeve, mechanical joint type. Gate valve connections shall be mechanical joint. Sleeves shall meet the requirements for cast iron fittings except the cement lining will not be required. Minimum working pressure shall be that specified for the system.

(d) Fire Hydrants: Fire hydrants shall conform to AWWA Designation: C 502 for 3-way type hydrants with working pressure of 150 psi (1.0 MPa). Hydrants shall be compression type and inlet connections shall be mechanical joint bell. Two 2 1/2 inches (65 mm) hose nozzles and one 4 1/2 inches (115 mm) pumper nozzle shall be provided; hose connections shall have National Standard threads. Hydrants shall have bronze seal rings, automatic drain openings and O-ring seals. Minimum valve openings of 4 inches shall be provided. Hydrants shall contain a breakaway feature at ground level consisting of breakaway bolts or flange and breakaway coupling on the rod. Main valve and valve seat shall be replaceable without digging up the hydrant. The hydrant exterior shall be painted with approved enamel and shall be repainted after installation (color: yellow).

(e) Plastic Pipe: Plastic pipe and tubing shall be polyvinyl chloride or polyethylene pipe and tubing.

(1) Polyvinyl chloride (PVC) pipe shall conform to ASTM D 2241 and be pressure rated at 200 psi (1.3 MPa) minimum. The pipe shall be made from polyvinyl chloride compounds conforming to Class 12454B (Type 1, Grade 1), ASTM D 1784.

(2) Polyethylene (PE) pipe and tubing shall conform to ASTM D 2239 (pipe) and D 2737 (tubing). Pipe or tubing shall be rated for use with water at 73.4°F (23°C) at a hydrostatic design stress of 630 psi (4.3 MPa). Pipe or tubing shall be made from polyethylene plastics conforming to Type III, Grade 3, ASTM D 1248.

(3) When specified, Schedule 40 PVC shall be in accordance with ASTM D 1785, Schedule 40, PVC 1120.

(4) Plastic pipe and fittings must bear the seal or "NSF" mark of the National Sanitation Foundation or other approved marking indicating approval for use in transporting potable water.

(5) Welding Solvent and Solvent Thinner shall conform to ASTM D 2564.

(f) Galvanized Steel Pipe: These pipes and fittings shall be galvanized steel seamless pipe conforming to ASTM A 53 (A 53M), standard weight. Fittings shall be malleable iron conforming to ANSI B 16.3 except the nipples and couplings shall be the same material as the pipe. Fittings shall be galvanized in accordance with ASTM A 53 (A 53M).

(g) Copper Pipe or Tubing: This pipe shall conform to ASTM B 88, Type K. Copper fittings shall be of the cast pattern or wrought pattern. Fittings for rigid copper pipe shall be of the solder joint type. Fittings for conceded soft draw pipe may be the flared mechanical type. Unions shall be the ground joint type.

(h) Detection Wire for Plastic Pipe: An approved electrically conductive insulated wire or tape shall be installed directly over and on the center of the plastic pipe for its entire length within highway right-of-way to facilitate locating of line with an electronic pipe locator. Wire or tape must be connected to all fixtures and appurtenances.

741.03 CONSTRUCTION REQUIREMENTS:

(a) General:

(1) Handling: Pipe, fittings and other materials shall be carefully handled to prevent breakage or damage, especially to the cement mortar lining in pipe and fittings.

(2) Existing Underground Utilities and Obstructions: All water lines, gas lines, telephone conduits, drainage structures, etc. shall be located and protected by the contractor during construction.

(b) Trench Excavation:

(1) Excavation: Excavation shall conform to Subsections 701.03 and 701.04, and the following requirements.

a. Protection of Excavation: Sheeting, shoring and hand excavation shall be used as necessary for protection of the work. Sheeting shall be withdrawn as backfilling is being done, except where the engineer directs that the sheeting and shoring be left in place, or where the engineer permits the sheeting to be left in place. The contractor shall cut off any sheeting left in place at least 18 inches (450 mm) below finished grade. Sheeting and bracing will not be paid for directly.

b. Trench Depth: Minimum bury (depth from grade to top of pipe) under pavement or surfacing shall be 4 feet (1.2 m). Minimum bury under ditches and in other non-paved areas shall be 2 feet (0.6 m).

c. Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at each joint location to permit the joint to be properly made and the pipe barrel to rest firmly on the trench bottom.

(2) Under Pavement:

a. Removing Pavement: The contractor shall remove existing pavement as necessary for trench excavation. Pavement shall be cut back from the top edges of trenches at least 24 inches (0.6 m) on each side of the trench. The requirements of Sections 510 and 602 shall be followed for removing and replacing pavement except that no separate payment will be made for this work.

b. Jacking and Boring: The contractor may elect to jack or bore pipe under existing pavement where practical; however, separate payment for jacked or bored pipe will only be made when jacking or boring of pipe is specified. Jacked or bored pipe shall be installed in accordance with Section 728.

(c) Connection to Existing Mains: Connection to existing mains shall be made with appropriate fittings as shown on the plans or as directed. When it is necessary to make such connections under pressure (i.e., when normal water service must be maintained) a tapping sleeve and valve shall be used. The contractor shall furnish the valve tapping machine and other equipment required.

(1) Location: The contractor shall, before opening pipe line trenches, locate the points where connections are to be made to existing pipe lines and shall uncover as necessary for the engineer to prescribe the types of connections and fittings to be installed.

(2) Interruption of Service: Connections to existing pipe lines shall be made at such times and in such manner as will meet operating requirements. No cut shall be made in existing lines until permission has been obtained as to time and manner of making cuts and connections.

(d) Laying Water Mains and Appurtenances:

(1) Sequence of Work: Excavation, cleaning, laying, jointing and backfilling shall be kept up as closely as possible. Pipe shall not be left in the trench overnight without completely jointing and capping. The contractor shall backfill and compact the trench as soon as possible after laying, jointing and testing is complete. Each day at the close of work, and when laying is not in progress, the exposed end of the pipe line in the trench shall be closed with an approved barrier of wood or metal. If it is necessary to cover the end of an uncompleted pipe line with backfill, the end of the pipe shall be closed using a satisfactory cap or plug.

(2) Alignment and Gradient: Pipe line alignment and gradient shall be straight, or shall be deflected to follow true curves as nearly as practical. Deflection of pipe lines shall be within the allowable laying deflection angle, both horizontal and vertical.

(3) Installation:

a. Connections: Connections which are made inside roadway shoulders, or curbs and gutters, shall be made with flexible joints.

b. Cutting: Where pipe or special castings are required to be cut, cutting shall be done using pipe cutters.

c. Gate Valves: Gate valves shall be installed and jointed as specified above for water mains. Installation of gate valves shall include valve boxes, where required.

d. Fire hydrants: Hydrants shall be installed and jointed as specified above for water mains. Installation of hydrants shall include vertical extension sections if required, pipe straps, concrete blocking, aggregate drain and backfill.

e. Concrete Blocking: Concrete blocking shall be Class R concrete conforming to Section 901 and shall be formed and poured at the backs of fittings, including elbows, tees, pipe plugs, fire hydrants and other locations shown on the plans or directed by the engineer.

f. Backfilling: Backfilling shall conform to Subsection 701.08 and these requirements.

When testing for leaks in open trenches, backfilling shall not be done until testing has been completed and leaks eliminated.

Where adjacent pavements are to be retained, pavement removed for pipe line trenches shall be replaced in kind or when approved, with equal or better material. After backfilling, the contractor shall maintain a satisfactory riding surface until repaving is completed. No separate payment will be made for replaced pavement.

g. Testing and Disinfection:

1. Testing: When a section of pipe is approved for testing, the contractor shall furnish all materials, equipment and labor to properly carry out this operation. This shall include a test pump and means of accurate measurement of water necessary to maintain required pressure during testing. The contractor shall furnish, install and remove any temporary bulkheads, flanges, plugs and corporation stops at high points in pipe lines and at the test pump, as necessary.

A. Sequence of Testing: When conditions permit, pipe lines shall be tested before the trench is backfilled and before service lines are installed; however, if high pressure testing must be done after service lines are in place, they shall be shut off at the corporation stops.

After necessary joints, bulkheads, etc. have been installed, corporation stops, if no other means can be provided, shall be placed in the high points of the pipe line and at the pump as required, and the pipe blown free from air according to accepted procedure.

B. Test Pressure: Test pressure shall be 50 psi (0.3 MPa) higher than the designated class pressure of pipe and fittings. Leakage shall not exceed 15 gallons per inch (1.4 L/mm) of pipe diameter per mile (km) per 24 hours. The minimum test period shall be 2 hours. However, if additional testing is required the contractor shall perform the procedure at his expense. When service lines cannot be isolated (i.e., shut off from the section to be tested), or other conditions exist where pressure testing as described above may cause damage, the line may be tested under normal operating pressure when approved. This work shall be done in open trenches, where possible, and testing repeated until leaks are eliminated.

C. Leaks and Defective Materials or Workmanship: Joints which leak shall be remade. Cracked, broken or defective materials shall be replaced. Defective workmanship shall be corrected. After the above conditions have been corrected, the line shall be retested as described above until the line passes the requirements. The contractor shall receive no additional compensation for the corrections or retesting.

2. Disinfection: Pipe lines and appurtenances, both existing and new which are the responsibility of the contractor, shall be disinfected before being placed in service. The disinfection process may be done in conjunction with the pressure test and shall be in accordance with AWWA C 601 and these requirements.

A solution of calcium hypochlorite or sodium hypochlorite (such as HTH, Perchloron, Chlorox, etc.) liquid chlorine or other approved disinfectant shall be used to obtain a solution of at least 50 ppm of available chlorine throughout the pipe system. No chlorine shall be applied to pipe as lines are being laid.

For this work, the contractor shall furnish suitable corporation stops, plugs or caps for the pipe, injection pumps, pipe connections and other equipment, and all labor required, at no additional cost to the Department.

While disinfectant is being applied to any section of the system, the water shall be allowed to escape at all extremities of this section until an orthotolidine test shows a deep orange color. The disinfectant shall be allowed to remain in the pipe at least 6 hours and tests shall be made to determine that a chlorine residual of at least 5 ppm remains. If there is not sufficient residual chlorine, disinfection shall be repeated. After disinfection, lines shall be thoroughly flushed to remove the chlorine. If bacteriological tests indicate that the lines are not free of coliform organisms, the disinfection procedure shall be repeated on that part of the system until proven to be free of contamination.

Disinfection shall be made in the presence of the engineer. The contractor shall notify the engineer at least 48 hours prior to the time lines are to be disinfected. The contractor shall furnish taps, corporation stops, tubing and faucets, and furnish labor to obtain samples of water from disinfected lines. These shall be collected and submitted to a biological laboratory of the State Board of Health. Copies of laboratory reports shall be submitted to the engineer. Disinfection shall be considered acceptable when reports indicate lines to be free of contamination. Lines shall be disinfected as soon after completion of testing as possible.

When tests are completed, test risers shall be removed and corporation stops plugged with an approved brass plug.

(e) Laying Service Lines and Appurtenances: Except as modified below, construction and installation of service lines shall conform to the requirements for laying water mains. Service lines shall include complete installation of the new pipe from the water main to the final location of the meter, or to such points as directed to connect with existing or future service lines and abutting property. Installation of service line pipe shall include necessary connections, including unions, valves, fittings, corporation stops, goosenecks where permitted, and curb stops.

(1) Excavation and Backfill:

a. Excavation: Excavation shall be done as specified elsewhere herein.

b. Backfill: Backfilling shall be done as specified herein after leakage test has been made under normal operation pressure in open trenches and leaks eliminated.

(2) Laying and Jointing: Jointing of copper pipe, galvanized steel pipe and plastic pipe shall be in accordance with standard practice for jointing water pipe and approved installation methods. Plastic pipe shall be placed in the trench to allow at least 1 percent additional length of pipe for thermal connection, and selected backfill material shall be placed and compacted to 6 inches above pipe before proceeding with normal backfill operations.

(f) Relocations, Adjustments and Removals:

(1) Water Valves, including valve boxes and fire hydrants, shall be relocated, adjusted to grade or removed as shown on the plans or as designated. The contractor shall protect all parts during the removing and relocating operation and shall replace all items lost or damaged at his expense. All lead or composition joints shall be melted out and each joint disconnected before being removed from the trench.

Relocated gate valves or fire hydrants shall be installed as specified for new gate valves or fire hydrants. Concrete blocking will be required for fire hydrants. Leakage tests shall be performed as specified above. Backfilling shall be done as specified herein. Concrete blocking and any additional pipe required in resetting the gate valve or fire hydrant at its new location will be paid for separately. Valve boxes, when they exist, shall be considered to be a part of the valve assembly and shall be removed with the valve.

(2) Existing water meters and boxes shall be relocated as shown on the plans or as designated. Relocation shall include removing the existing meter, meter box, all required pipe, unions and appurtenances, storage, protection where necessary, and reinstalling the meter, meter box and curb stop in the existing service line as directed. The contractor, with the engineer, shall inspect each meter before its removal to determine its condition. If a meter is defective, the contractor will be furnished a replacement meter for the installation.

(3) Existing water service lines shall be adjusted to grade, by excavating for, and lowering or raising the existing service lines and backfilling at the same location, as shown on the plans or directed. Any new materials or fittings required for the adjustment shall be furnished by the contractor without additional compensation. He shall also make any required changes in the connection at the main which are the result of this work. All leaks and damage caused by the contractor's operations shall be repaired at his expense. If a water meter is to be retained at the same location in an existing service line that is to be adjusted, the meter and box shall also be adjusted to proper grade. No additional compensation will be allowed for this adjustment.

(4) Existing water meter and water valve boxes shall be lowered or raised to the grade established on the plans or by the engineer.

(5) Existing house connections shall be adjusted as required. New pipe and fittings required to adjust house connections shall be equal in quality to that of the existing installation and meet requirements of the utility and code.

741.04 MEASUREMENT:

(a) Water Mains: Water mains will be measured by the linear foot (lin m) along the center, parallel to the slope of the pipe, from end to end of each installation through all fittings.

(b) Fittings: Pipe fittings will be considered subsidiary to the water line in which they are used.

(c) Gate valves, including boxes when required, will be measured by the number of each size installed.

(d) Tapping sleeve and valve assembly will be measured by the number of each size installed.

(e) Fire hydrants will be measured by the number of each installed.

(f) Service Lines: Service lines will be measured by the linear foot (lin m) from end to end, and from center of lines to ends of branches, including valves and fittings.

(g) Relocating Fire Hydrants, Water Valves and Water Meters: Existing fire hydrants, water valves and water meters will be measured by the number of each relocated, including relocation of boxes for such valves and meters.

(h) Adjusting Meter Boxes and Valve Boxes: Existing meter boxes and valve boxes adjusted to grade in their original locations will be measured by the number adjusted.

(i) Removal of Water Valves and Fire Hydrants: Existing water valves, including boxes when necessary, and fire hydrants will be measured by the number of each removed.

(j) Excavation and Backfill: Excavation and backfill will not be measured for payment.

(k) Concrete Blocking: Concrete blocking will be measured by the cubic yard (cu m) of concrete used.

(l) Adjusting Water House Connections: This item will be measured by the number of house connections adjusted.

(m) Adjusting Service Lines to Grade: This item will be measured in linear feet (lin m) of service line pipe lowered or raised, including valves, fittings, meters, boxes and other appurtenances. Measurement will be made from end to end of adjusted service line.

(n) Incidentals: Pavement removed and replaced, including sawing, testing, disinfection and detection wire for plastic pipe, will not be measured for payment.

(o) Casing will be measured by the linear foot (lin m) along the center, parallel to the slope of the casing.

(p) Butterfly valves, including boxes when required, will be measured by the number of each installed.

(q) Double strap saddles will be measured by the number of each installed.

741.05 PAYMENT:

(a) Water main pipe will be paid for per linear foot (lin m) for each size of pipe installed, which includes fittings, excavation, backfilling, removal and replacement of pavement, testing, sterilizing, and laying pipe in casing when required.

(b) Gate valves will be paid for per each, which includes box if required, and joint connections.

(c) Tapping sleeve and valve assemblies will be paid for per each, which includes joint connections.

(d) Fire hydrants will be paid for per each, which includes vertical extensions, joint connections, pipe straps and stone drain.

(e) Service line pipe will be paid for per linear foot (lin m), which includes excavation, backfilling, removal and replacement of pavement, testing, sterilizing, corporation and curb stops, goosenecks where required, fittings, jointing, connecting to the main, and laying pipe in casing when required.

(f) Relocating fire hydrant will be paid for per each, which includes crushed stone drain.

(g) Relocating water valve including box will be paid for per each, which includes excavation and backfill.

(h) Relocating water meter including box will be paid for per each set, which includes excavation and backfill.

(i) Adjusting water house connections will be paid for per each, which includes necessary adjustment of service lines not exceeding 20 linear feet (6.1 lin m) per house connection, and required new pipe and fittings.

(j) Adjusting water service lines in excess of 20 linear feet (6.1 lin m) per house connection will be paid for per linear foot (lin m) of adjusted service line, which includes required new pipe and fittings.

(k) Adjusting meter boxes and valve boxes to grade will be paid for per each.

(l) Removal of water valves will be paid for per each, which includes valve box.

(m) Removal of fire hydrants will be paid for per each.

(n) Concrete blocking will be paid for per cubic yard (cu m).

(o) Casing will be paid for per linear foot (lin m), which includes excavation, backfilling, and removal and replacement of pavement.

(p) Butterfly valves will be paid for per each size, which includes box if required, and joint connections.

(q) Double strap saddles will be paid for per each, which includes joint connections.

(r) Payment will be made at the contract unit prices under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
741-01	Water Main (Size & Type)	Linear Foot (Lin m)
741-02	Gate Valve (Size)	Each
741-03	Tapping Sleeve and Valve Assembly (Size)	Each
741-04	Fire Hydrant	Each
741-05	Water Service Line (Size & Type)	Linear Foot (Lin m)
741-06	Relocating Fire Hydrant	Each
741-07	Relocating Water Valve	Each
741-08	Relocating Water Meter	Each
741-09	Adjusting Water House Connections	Each
741-10	Adjusting Water Service Lines	Linear Foot (Lin m)
741-11	Adjusting Water Valve and Meter Box	Each
741-12	Removing Water Valve Including Box	Each
741-13	Removing Fire Hydrant	Each
741-14	Concrete Blocking	Cubic Yard (Cu m)
741-15	Casing (Size & Type)	Linear Foot (Lin m)
741-16	Butterfly Valve (Size)	Each
741-17	Double Strap Saddle (Size)	Each

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS**

**SECTION 742
SANITARY SEWER SYSTEMS**

The 2006 Standard Specifications are amended to include this Section.

742.01 DESCRIPTION. This work consists of furnishing the necessary materials and installing, relocating and adjusting sanitary sewers and appurtenances in accordance with these specifications and in conformity with the lines and grades shown on the plans or established by the engineer.

Sewer manholes and junction boxes shall be constructed or reconstructed in accordance with the plans and Section 702.

The contractor shall coordinate his work activities with utility owners in accordance with Subsections 105.06 and 107.20 and shall observe all laws in accordance with Subsection 107.01.

742.02 MATERIALS. A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required in accordance with Subsection 106.04.

When the item "Sanitary Sewer Pipe" is included in the contract, the contractor has the option of furnishing any of the following materials unless otherwise specified.

(a) Cast Iron and Ductile Iron Pipe:

(1) Cast Iron Pipe: Cast iron pipe shall be made of gray cast iron and shall conform to ANSI A 21.6 (centrifugally cast in metal molds) or A 21.8 (centrifugally cast in sand lined molds). The iron in the pipe shall have a bursting tensile strength of at least 21,000 psi (145 MPa) and shall have a ring modulus of rupture of at least 45,000 psi (310 MPa). Pipe shall have thickness corresponding to Class 25 of A 21.6 or A 21.80.

(2) Ductile Iron Pipe: Ductile iron pipe shall consist of ductile cast iron and shall conform to ANSI A 21.51 (centrifugally cast in metal or sand lined molds). Pipe shall have thickness corresponding to Class 5 of A 21.51.

(3) Fittings: Fittings for cast iron or ductile iron pipe shall conform to ANSI A 21.10.

(4) Coating: The exterior and interior of pipe and fittings shall be covered with an approved bituminous coating in accordance with the above specifications.

(5) Joints: Pipe joints shall conform to ANSI A 21.11 and shall be the following types, as specified.

- a. Mechanical Joint (Type III) with alloy steel bolts and nuts.
- b. Boltless single gasket and push-on joint.
- c. Submarine, flexible, ball and socket joint.
- d. Flanged joint.

Flange bolts in contact with sewage or sludge shall be stainless steel or bronze.

(b) Clay Pipe: Vitrified clay sewer pipe and fittings shall conform to ASTM C 700 and shall have compression joints conforming to ASTM C 425. Pipe 6 inches (150 mm) and under shall be "Standard Strength Clay Pipe", and above 6 inches (150 mm) shall be "Extra Strength Clay Pipe".

(c) Plastic Pipe:

(1) Acrylonitrile-Butadiene-Styrene (ABS): Pipe and fittings shall conform to ASTM D 2680 for composite-wall pipe, and ASTM D 2751 (SDR 35) for solid-wall pipe.

(2) Polyvinyl Chloride (PVC): Pipe and fittings shall conform to ASTM D 3034, Type PSM (SDR 35).

(3) Detection Wire for Plastic Pipe: An approved electrically conductive insulated wire or tape shall be installed on the center of the plastic pipe for its entire length within highway right-of-way to facilitate location of line with an electronic pipe locator. Wire or tape must be connected to all fixtures and appurtenances.

(d) Concrete Sewer Pipe: Nonreinforced concrete sewer pipe shall conform to ASTM C 14 (C 14M), Class 2. Joints shall be Type 3 in accordance with Subsection 1006.05.

(e) Reinforced Concrete Sewer Pipe: Reinforced Concrete Sewer Pipe shall conform to Subsection 1006.03. Joints shall be Type 3 in accordance with Subsection 1006.05.

742.03 MAINTENANCE OF SEWAGE FLOW. The contractor shall maintain continuous flow of sewage during relocation operations. No diversion of sewage flow into open trenches or streams will be permitted.

742.04 CONSTRUCTION REQUIREMENTS.

(a) General: Underground water lines, gas lines, telephone conduits, drainage structures, etc. shall be located and protected by the contractor during construction.

(b) Trench Excavation:

(1) Excavation: The requirements of Subsections 701.03 and 701.04 and these additional requirements shall be met.

a. Protection of Excavation: Sheet piling, shoring and hand excavation shall be used as necessary for protection of the work. Sheet piling in excavation shall be withdrawn as backfilling is being done, except where the engineer directs that sheet piling and shoring be left in place, or where the engineer permits sheet piling to be left in place at the contractor's expense. The contractor shall cut off sheet piling left in place at least 18 inches (450 mm) below finished grade. Sheet piling and bracing will not be paid for directly unless there is a contract item for this work or unless sheet piling and bracing were left in place by order of the engineer. The pipe grade and line shall not be disturbed.

b. Minimum Trench Depth (Bury): Minimum bury under pavement or surfacing shall be 4 feet (1.2 m). Minimum bury under ditches shall be 24 inches (0.6 m). Minimum bury for installations parallel to roadway shall be 24 inches (0.6 m).

c. Joints and Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at each joint location to permit the joint to be properly made and

the pipe barrel to rest firmly on the ditch bottom. The trench shall be dry when jointing and laying pipe.

(2) Under Pavement:

a. Removing Pavement: The contractor shall remove existing pavement as necessary for trench excavation. Pavement shall be cut back from top edges of trenches at least 24 inches (0.6 m) on each side of the trench. The requirements of Sections 510 and 602 shall be followed for removing and replacing pavement except that no separate payment will be made for this work unless a pay item for pavement patching is provided.

b. Jacking and Boring: The contractor may jack or bore pipe under existing pavement where practical, but payment in these instances will be made under the item for installation in an open trench. Separate payment for jacked or bored pipe will be made when the plans or specifications require that the pipe be installed in that manner and an item is included in the contract. Pipe that is jacked or bored shall be installed in accordance with Section 728.

(c) Connections: No pipe shall be cut for connections except as indicated on the plans or directed. The cost for making connections, including connections to existing facilities, shall be included in the contract price for sewer pipe.

(1) Manhole Connections: The contractor shall use care in connecting new sewer lines to existing manholes and connecting existing sewer lines to new manholes to avoid infiltration of foreign substances. Manholes shall be cleaned of fallen masonry or debris.

(2) Connections for Future Use: Connections for future use shall be capped and sealed in accordance with the requirements for sealing joints.

(3) House Connections: Wyes and tees installed in a common sewer for house connections shall be installed as shown on the plans or as directed.

(d) Adjusting Sanitary Sewer House Connections and Service Lines: New pipe and fittings required to adjust house connections shall be equal in quality to that of the existing installation and meet the requirements of the utility and code.

742.05 TESTS. Completed sewer lines shall be tested with reflected light and shall show an unobstructed view between manholes. Infiltration shall not exceed 10 gallons per day per inch (1.5 L/mm per day) diameter per 100 feet (30 m) of pipe. On lines where flow indicates infiltration in excess of this amount, a leakage test shall be conducted at the contractor's expense by a method satisfactory to the engineer. Sewer lines showing excessive leakage or undue deviation from line or grade shall be repaired or replaced by the contractor at his expense.

742.06 MEASUREMENT.

(a) Excavation and Backfill: Excavation, foundation preparation material and backfill will not be measured for payment, with the following exception. If an item for Bedding Material is included in the contract, this item will be paid for within the limits specified and in accordance with Section 726.

(b) Sanitary Sewer Pipe: Pipe will be measured in linear feet (lin m) along the centerline of the pipe.

(c) Wyes, Tees and Other Fittings: These items will not be measured separately but will be included in the overall measurement as indicated above.

(d) Manholes: Sanitary or combination sewer manholes will be measured in accordance with Section 702.

(e) Adjustment of Existing Manholes: Adjustment of existing sanitary or combination sewer manholes will be measured in accordance with Section 702.

(f) Concrete Blocking: Concrete blocking will not be measured for payment.

(g) Adjusting Sanitary Sewer House Connections and Service Lines: Adjusting sanitary sewer house connections will be measured per each connection. Adjusting sanitary sewer service lines will be measured by the linear foot (lin m) of adjusted line.

(h) Casings: Casings will be measured by the linear foot (lin m) along the centerline of casing.

(i) Incidentals: Pavement removed and replaced, including sawing, connections, testing and detection wire for plastic pipe, will not be measured for payment.

742.07 PAYMENT:

(a) Sewer pipe installations, sanitary or combination, will be paid for at the contract price per linear foot (lin m), which includes furnishing and hauling all materials; excavation and backfill; connections; capping and sealing connections for future use; and the maintenance of continuous flow of sewage in existing sewers during relocating operations.

When a pay item for Bedding Material is included in the contract, payment will be in accordance with Section 726.

(b) Manholes and manhole adjustments will be paid for in accordance with Section 702.

(c) Payment for adjusting house connections will include adjustment of service lines not exceeding 20 linear feet (6.1 lin m) per house connection. Payment for service line adjustments in excess of 20 linear feet (6.1 lin m) per house connection will be made by the linear foot (lin m) of adjusted service line. Payment for these items includes required new pipe and fittings, and excavation and backfill.

(d) Casings will be paid for at the contract unit price per linear foot (lin m).

(e) Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
742-01	Sanitary Sewer Pipe (Size)	Linear Foot (Lin m)
742-02	Adjusting Sanitary Sewer House Connections	Each
742-03	Adjusting Sanitary Sewer Service Lines	Linear Foot (Lin m)
742-04	Casing (Size & Type)	Linear Foot (Lin m)

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS**

FEMALE AND MINORITY PARTICIPATION IN CONSTRUCTION

The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designated by the director of OFCCP. Execution of the contract by the successful bidder and any subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in this notice.

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

AREA	PARISH OR COUNTY	GOAL (%)
FEMALE PARTICIPATION		
-	All Covered Areas	6.9
MINORITY PARTICIPATION (UNDER NEW ORLEANS PLAN)		
-	* See Note Below	20 to 23
MINORITY PARTICIPATION (NOT UNDER NEW ORLEANS PLAN)		
1	Jefferson LA, Orleans LA, St. Bernard LA, St. Tammany LA	31.0
2	Assumption LA, Lafourche LA, Plaquemines LA, St. Charles LA, St. James LA, St. John the Baptist LA, Tangipahoa LA, Terrebonne LA, Washington LA, Forrest MS, Lamar MS, Marion MS, Pearl River MS, Perry MS, Pike MS, Walthall MS	27.7
3	Ascension LA, East Baton Rouge LA, Livingston LA, West Baton Rouge, LA	26.1
4	Concordia LA, East Feliciana LA, Iberville, LA, Pointe Coupee LA, St. Helena LA, West Feliciana LA, Adams MS, Amite MS, Wilkinson, MS	30.4
5	Lafayette LA	20.6
6	Acadia LA, Evangeline LA, Iberia LA, St. Landry LA, St. Martin LA, St. Mary LA, Vermillion LA	24.1
7	Calcasieu LA	19.3
8	Allen LA, Beauregard LA, Cameron LA, Jefferson Davis LA, Vernon LA	17.8
9	Grant LA, Rapides LA	25.7
10	Avoyelles LA, Bienville LA, Bossier LA, Caddo LA, Claiborne LA, DeSoto LA, Natchitoches LA, Red River LA, Sabine LA, Webster LA, Winn LA	29.3
11	Ouachita LA	22.8
12	Caldwell LA, Catahoula LA, East Carroll LA, Franklin LA, Jackson LA, LaSalle LA, Lincoln LA, Madison LA, Morehouse LA, Richland LA, Tensas LA, Union LA, West Carroll LA,	27.9

*These goals apply only to those contractors signatory to the New Orleans Plan and only with respect to those trades which have unions participating in said Plan. The New Orleans Plan Covered Area is as follows: The parishes of Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John the Baptist, Plaquemines, Washington, Terrebonne, Tangipahoa (that area east of the Illinois Central Railroad), Livingston (that area southeast of the line from a point off the Livingston and Tangipahoa Parish line adjacent from New Orleans and Baton Rouge), St. James (that area southeast of a line drawn from the Town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes), and Lafourche.

These goals are applicable to all the contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor is also subject to the goals for both its federally involved and non-federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor, or from project to project, for the purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Regional Administrator of the Office of Federal Contract Compliance Programs (555 Griffin Square Building, Dallas, TX 75202) within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and geographical area in which the contract is to be performed.

4. As used in this Notice and in the contract, the "covered area" is that area shown in the foregoing table in which the project is located.

The following Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of \$10,000. Execution of the contract by the successful bidder and any

subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in these Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS
(EXECUTIVE ORDER 11246)**

1. As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
- c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941.
- d. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. If the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, he shall include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is required to comply with his obligations under the EEO clause, and to make good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractor or subcontractors toward a goal in an

approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office or from federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women, shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications will be based on his effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign 2 or more women to each construction project. The contractor shall ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to

- community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the contractor has taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman set by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.
 - f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting his EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendent, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the contractor's EEO policy externally by including it in ny advertising in the news media, including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than 1 month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above describing the openings, screening procedures and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.
- l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet his goals and timetables and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A goal for minorities and a separate goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a group is employed

in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a minority group of women is underutilized).

10. The contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The contractor shall not enter into a subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling his obligations under these specifications, shall implement specific affirmative actions steps, at least as extensive as the standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors will not be required to maintain separate records.

15. Nothing herein shall be construed as a limitation on the application of other laws which establish different standards of compliance or on the application of requirements for hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and subcontractors holding subcontracts (not including material suppliers) in excess of \$10,000

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shall submit for every month of July during which work is performed, employment data as contained under Form FHWA-1391 in accordance with instructions included thereon.

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS**

NEW ORLEANS PLAN

Each bidder, contractor or subcontractor (hereinafter called the contractor) must fully comply with these bid conditions as to each construction trade intended to be used on this construction contract and all other construction work (both federal and nonfederal) in New Orleans Plan Area during the performance of this contract or subcontract. The contractor commits to the minority and female employment utilization goals set forth herein and all other requirements, terms and conditions expressed herein by submitting a properly signed bid.

The contractor shall appoint a company executive to assume the responsibility for implementation of the requirements, terms and conditions of these bid conditions.

These specifications implementing the New Orleans Plan for employment of minorities and females have been imposed by the U. S. Department of Labor by order on September 8, 1971, as amended, for all nonexempt federal and federally assisted construction contracts to be awarded in the area of jurisdiction of the Southeast Louisiana Building and Construction Trades Council in the City of New Orleans and Southeast Louisiana. This area consists of the parishes of Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John the Baptist, Plaquemines, Washington, Terrebonne, Tangipahoa (that area east of the Illinois Central Railroad), Livingston (that area southeast of the line from a point off the Livingston and Tangipahoa Parish line adjacent from New Orleans and Baton Rouge), St. James (that area southeast of a line drawn from the Town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes), and Lafourche.

The provisions of these bid conditions apply to contractors which are party to collective bargaining agreements with labor organizations which together have agreed to the New Orleans Area Construction Program (hereinafter called the New Orleans Plan) for equal opportunity and have jointly made a commitment to goals of minority and female utilization. The New Orleans Plan is a voluntary agreement between (1) Southeast Louisiana Building and Construction Trades Council; (2) contractors and subcontractors who are signatory to the New Orleans Plan; (3) the Urban League of Greater New Orleans and representatives of the minority community; and (4) the City of New Orleans. The New Orleans Plan, together with all implementing agreements that have been and may hereafter be developed pursuant thereto, are incorporated herein by reference.

The requirements set forth herein shall constitute the specific affirmative action requirements for activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

The contractor and all subcontractors holding contracts in excess of \$10,000 shall comply with the following minimum requirement activities of equal employment opportunity. The contractor shall include these requirements in every subcontract in excess of \$10,000 with such modification of language as necessary to make them binding on the subcontractor.

Each contractor and subcontractor shall submit a monthly employment utilization report, Standard Form 257, covering the contractor's entire work force employed on all contracts (both federal and nonfederal) held in the New Orleans Area. In addition, a list of the federal and nonfederal contracts which are covered by the report shall be furnished. The report shall be submitted to the engineer no later than the 10th day following the end of the month being reported. The report shall end on the next to the last Saturday in the month being reported and shall reflect all hours worked between this date and the close out date in the preceding month. Copies of all payrolls and personnel data shall be retained for 3 years after final acceptance of the project. These records and documents, or copies thereof, shall be made available at reasonable times and places for inspection by an authorized representative of the State or Federal Government and shall be submitted upon request with any other compliance information which such representative may require.

In addition to the reporting requirements set forth above, the contractor and the subcontractors holding subcontracts, not including material suppliers, in excess of \$10,000 shall submit for every month of July during which work is performed, employment data as contained under Form FHWA-1391, and in accordance with the instructions included thereon.

A contractor may be in compliance with these bid conditions by its participation in the New Orleans Plan and applicable provisions contained in the "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)" and Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS
ON-THE-JOB TRAINING**

The Louisiana Department of Transportation and Development (LADOTD) has partnered with the Louisiana Associated General Contractors (LAGC) to ensure that on-the-job training is provided on a voluntary basis by contractors performing work on LADOTD's federally assisted construction projects.

The LAGC has committed that its member contractors will enroll a minimum of 15 trainees statewide during the period July 1 through June 30 annually. It is anticipated that this annual training goal will be increased in future years as participation in the program grows.

The LADOTD on-the-job training program will be monitored by the Compliance Programs Section. At all times it will be the responsibility of the contractor to comply with the Job Training Supplemental Specifications. LAGC will provide support to their member contractors in the area of on-the-job training as they would in any contractual activity. LAGC has committed to assisting contractors in areas such as recruitment, record keeping, graduation certificates, and ongoing encouragement of contractors to participate in the training program. LAGC has expressed their willingness to work with LADOTD and FHWA in making the contracting industry as strong as possible in all areas, including on-the-job training.

Non-LAGC members are encouraged to participate in the LADOTD on-the-job training program. No aspect of the LADOTD/LAGC partnership is designed to eliminate the right of any non-LAGC member to participate in the training program described in these specifications. If any non-LAGC member does not utilize a previously approved training program, he/she is directed to develop and submit a training program to LADOTD for approval by LADOTD and FHWA.

Although training under this contract is not limited to minorities and females, contractors should be aware that one of the objectives of the training program is to increase the participation and skills of minorities and females in highway construction. Contractors must exert good faith efforts to comply with the Equal Employment Opportunity contract requirements governing recruitment and upgrading when seeking to fill vacancies in the work force and select candidates for the training program. Adequate documentation of good faith efforts should be maintained and submitted to the Compliance Programs Section Training Program Manager (TPM) when requested.

These supplemental specifications are in implementation of 23 USC 140(a). Training under this contract shall be optional to the successful bidder, provided the item for which training is requested is less than 70 percent complete. If the contractor elects to provide training under the

contract as established in these specifications, he may submit a written request to the project engineer with a copy to the Construction Section. A plan change will be prepared to incorporate a pay item using the trainee hours stated in the Special Provisions elsewhere herein. Training will only be reimbursed after the approval of this plan change.

It is intended that training under these supplemental specifications be in crafts directly related to highway construction. Therefore, training in classifications such as clerk-typist, secretary, bookkeeper, fireman, office engineer, estimator, timekeeper, and unskilled or common laborer will not be approved for participation under these supplemental specifications.

No employee shall be employed as a trainee in any classification in which he/she has successfully completed a training course leading to journey person status or in which he/she has been employed as a journey person. The contractor shall satisfy this requirement by completing the Contractor's Trainee Enrollment & Interview Form for each potential trainee. The completed form shall be electronically submitted to the TPM for review and approval.

The contractor will be reimbursed \$3.00 per hour of training provided in accordance with an approved training program. Reimbursement will be made for training hours in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the contractor from receiving other reimbursement. The contractor will be reimbursed for the number of trainee hours actually trained on the project in accordance with these supplemental specifications.

The contractor will be credited for each trainee employed on the project that is currently enrolled or becomes enrolled in an approved training program and will be reimbursed for such trainees as provided in these supplemental specifications.

The minimum length and type of training for each classification selected by the contractor will be established in the training program approved by the Department, Federal Highway Administration (FHWA), and/or Office of Federal Contract Compliance Programs (OFCCP). The Department, FHWA, and/or OFCCP will approve a program if it is reasonably calculated to meet the Equal Employment Opportunity obligations of the contractor and to qualify the average trainee for journey person status in the classification concerned by the end of the training period. Apprenticeship programs registered with the U. S. Department of Labor, Bureau of Apprenticeship and Training or with a state apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U. S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training will also be considered acceptable if it is being administered in a manner consistent with the equal employment obligations of federal-aid highway construction contracts.

It is normally expected that a trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his/her work classification or until he/she has completed the training program.

Enrollment of trainees in excess of the required number will be permitted, with approval, to allow the contractor to maintain the required continuous effort to complete the training of individual trainees.

Trainees will be paid at least 60 percent of the appropriate minimum journey person's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent of the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by these supplemental specifications.

The contractor, prior to the start of training, shall provide written notice to each person to be trained under these supplemental specifications of that person's designation as a trainee, the training program and classification under which training will be provided, the length of the training program, and the hourly wage rate to be paid to the trainee. This requirement shall be fulfilled by use of the Contractor's Trainee Enrollment & Interview Form.

Upon graduation, the contractor shall issue the trainee a certification showing the type and length of training satisfactorily completed along with a permanent photo identification card designating the bearer as a graduate journey person of the appropriate training program.

The contractor shall electronically submit the Contractor's Trainee Enrollment & Interview Form for each employee on the project who is enrolled as a trainee in an approved training program or apprenticeship program. The trainee enrollments shall be submitted to the TPM within the first payroll period in which each trainee or apprentice is assigned to the project.

In order to collect the \$3.00 per hour reimbursement for training, the contractor shall electronically submit to the project engineer's office each week that training is conducted on the project the Contractor's OJT Weekly Reporting Form along with the payroll. For projects where weekly payroll submission is not required, the Contractor's OJT Weekly Reporting Form shall be submitted to the project engineer's office.

At anytime during the life of the project, provided that the item for which training is requested is less than 70 percent complete, a subcontractor may elect to train. The subcontractor should follow the steps described above in order to participate in the on-the-job training program. If the

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On-The-Job Training

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subcontractor does not utilize a previously approved training program, he/she is directed to develop and submit a training program to the TPM for approval by LADOTD and FHWA.

Contractors are to train according to their work force needs and as training opportunities exist on a project. If a trainee graduates from a training classification, training opportunities no longer exist in the approved classification, or a contractor's work force needs change, a trainee could be enrolled in a different classification. The Contractor's OJT Change Form is to be used when these circumstances necessitate enrolling a current trainee or a graduate in a new classification. Multiple enrollments of an individual should not be used to diminish the objectives of these specifications, but to enhance the trainee's career growth, benefit the contractor's operations, and improve the contracting industry overall.

All required forms can be found on the LADOTD website on the Compliance Programs page and the Construction Letting Information page under Doing Business with DOTD. Instructions for completing any required form may be obtained from the TPM.

It is the goal of the LADOTD/LAGC partnership to maintain a voluntary on-the-job training program, but revisions to the program may be deemed necessary should participation fall below acceptable levels.

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT**

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

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ATTACHMENTS

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will

implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any

account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional

classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State

apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee

program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than

one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph

3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each apprentice, trainee, and helper) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all

may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and

similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

Notice to all Personnel engaged on Federal-Aid Highway Projects

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 *et seq.*, as amended by Pub.L. 92-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.*, as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, INELIGIBILITY AND SUSPENSION, VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions: (Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered

transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Covered Transactions: (Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension,
Ineligibility and Voluntary Exclusion--Lower Tier
Covered Transactions:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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**XII. CERTIFICATION REGARDING USE OF
CONTRACT FUNDS FOR LOBBYING**

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any

Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

REQUIRED CONTRACT PROVISIONS
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009
(ARRA) CONSTRUCTION CONTRACTS

As required by Section 902 of the *AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009*, the following contract provisions shall apply to all ARRA funded contracts. All prime contracts, subcontracts, and other contracts for services for an ARRA funded project must comply with the following:

Required Contract Provision to Implement ARRA Section 902:

Section 902 of the American Recovery and Reinvestment Act (ARRA) of 2009 requires that each contract awarded using ARRA funds must include a provision that provides the U.S. Comptroller General and his representatives with the authority to:

“(1) to examine any records of the contractor or any of its subcontractors, or any State or local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and

(2) to interview any officer or employee of the contractor or any of its subcontractors, or of any State or local government agency administering the contract, regarding such transactions.”

Accordingly, the Comptroller General and his representatives shall have the authority and rights as provided under Section 902 of the ARRA with respect to this contract, which is funded with funds made available under the ARRA. Section 902 further states that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

Additionally, please be advised that Section 1515(a) of the ARRA provides as follows:

“(a) ACCESS. --With respect to each contract or grant awarded using covered funds, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1978 (5 U.S.C. App.), is authorized –

(1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract, that pertain to, and involve transactions relating to, the contract, subcontract, grant, or subgrant; and

(2) to interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.”

Suggested Notification of the Authority of the Inspector General

Section 1515(a) of the ARRA provides authority for any representatives of the Inspector General to examine any records or interview any employee or officers working on this contract. The contractor is advised that representatives of the inspector general have the authority to examine any record and interview any employee or officer of the contractor, its subcontractors or other firms working on this contract. Section 1515(b) further provides that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of an inspector general.

THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 REPORTING REQUIREMENTS

Federal Highway Administration
U.S. Department of Transportation
March 23, 2009

Monthly Employment Report (Form: FHWA – 1589)

This form is a guide for the States in providing employment information on each ARRA project. Monthly employment information on each ARRA project is used by States for meeting the reporting requirements of Sections 1201 and 1512. In order for States to fulfill their reporting obligations, the States must collect and analyze certain employment data for each ARRA funded contract. The data requirement in ARRA extends beyond the number of workers at the work site and, therefore, FHWA has produced a form for guidance to the States. This data to be reported is identified below and will be used by the States in developing Form 1587, which is to be submitted to FHWA. Since States may not currently collect this data, the States should develop a new specification for each ARRA-funded contract in order to obtain this information from contractors and consultants. In doing so, the States should use the provided model form and require the reporting of this data from the prime contractor or consultant. The prime contractor or consultant shall complete a report for each month from the date of the Notice to Proceed until completion of the contract or September, 2012 whichever occurs sooner. This report is only required for contracts that use ARRA funds. States should require contractors and consultants to provide the required information for their own workforce as well as the workforce of all subcontractors that were active on their ARRA funded project(s) for the reporting month. It will be up to each State to determine when they obtain the necessary data from their contractors or consultants, keeping in mind that the summary form is due from the State to the FHWA Division no later than the 20th day of each month for the preceding month's data.

It is the State DOT's responsibility to report the number of jobs on projects managed by funding recipients, such as other state agencies or local governments. The State DOT must make arrangements with each ARRA funding recipient to assure each recipient reports the required data in a timely manner.

The States shall require the following data be provided by each contractor, consultant and funding recipient working on an ARRA project. The primary contractor or consultant for each project shall be responsible for reporting their firm as well as all sub-contractors data.

Format: The State, contractors, or consultant may use the FHWA provided model form, but the use of the model form is optional and at the discretion of the State.
Due date: As determined by the State, until September 2012.
Due to: To be sent by each ARRA funded project prime contractor or consultant to the designated office in each State DOT or Federal Lands Division Office.

Coding Instructions

BOX 1. Report Month: The month and year covered by the report, as mm/yyyy (e.g. "May 2009" would be coded as "05/2009").

- BOX 2. **Contracting agency:** The name of the contracting agency. Enter “State” for State DOT projects. For non-State projects, enter the name of the contracting agency (other State agency, Federal agency, tribe, MPO, city, county, or other funding recipient).
- BOX 3. **Federal-aid project number:** The State assigned federal-aid project number, consistent with the format reported in FMIS.
- BOX 4. **State project number or identification number:** The project number or ID, as assigned by the State of its funding recipient, consistent with the format reported in FMIS.
- BOX 5. **Project location:** State where project occurs. If the project performed for Federal Lands, provide the FLH Division or Federal Land Managing Agency (FLMA) region.
- BOX 6. **Contractor name and address:** The name and address of the contracting or consulting firm shall include the name, street address, city, state, and zip code.
- BOX 7. **Contractor DUNS number:** The unique nine-digit number issued by Dun & Bradstreet. Followed by the optional 4 digit DUNS Plus number. Reported as “999999999.9999”.
- BOX 8. **Employment data:** The prime contractor or consultant will report the direct, on-the-project jobs for their workforce and the workforce of their sub-contractors active during the reporting month. These jobs data include employees actively engaged in projects who work on the jobsite, in the project office, in the home office or telework from a home or other alternative office location. This also includes any engineering personnel, inspectors, sampling and testing technicians, and lab technicians performing work directly in support of the ARRA funded project. This does not include material suppliers such as steel, culverts, guardrail, and tool suppliers. States should include in their reports all direct labor associated with the ARRA project such as design, construction, and inspection. The States reports should include their own project labor, including permanent, temporary, and contract project staff. States are asked not to include estimated indirect labor, such as material testing, material production or estimated macro-economic impacts. FHWA will be estimating all indirect labor based on the information provided in this form along with other FHWA data. The form requests specifically:
- a. **Subcontractor name:** The name of each subcontractor or sub-consultant that was active on the project for the reporting month.
 - b. **Employees:** The number of project employees on the contractor’s or consultant’s workforce that month, and the number of project employees for each of the active subcontractors for the reporting month. Do not include material suppliers. Total field at bottom will be automatically calculated and reported as a whole number.
 - c. **Hours:** The total hours on the specified project for all employees reported on the contractor’s or consultant’s project workforce that month, and the total hours for all project employees reported for each of the active subcontractors that month. Total field at bottom will be automatically calculated and reported as a whole number.

- d. **Payroll:** The total dollar amount of wages paid by the contractor or consultant that month for employees on the specified project, and the total dollar amount of wages paid by each of the active subcontractors that month. Payroll only includes wages and does not include overhead or indirect costs. Total field at bottom will be automatically calculated and will be rounded to the nearest whole dollar and reported as a whole number.

BOX 9.

Prepared by:

- a. **Name:** Indicate the person responsible for preparation of the form. By completing the form the person certifies that they are knowledgeable of the hours worked and employment status for all the employees. Contractors, consultants, and their subs are responsible to maintain data to support the employment form and make it available to the State should they request supporting materials.
- b. **Date:** The date that the contractor completed the employment form. Reported as “mm/dd/yyyy.” (e.g. “May 1, 2009” would be coded as “05/01/2009”).

MONTHLY EMPLOYMENT REPORT
AMERICAN RECOVERY AND REINVESTMENT ACT

1. Report Month: (mm/yyyy)	2. Contracting Agency	
3. Federal-Aid Project Number	4. State Project Number or ID Number	5. Project Location: State, County or Federal Region
6. CONTRACTOR NAME AND ADDRESS Name: Address: City: State: Zip:		
7. Contractor/Subcontractor DUNS Number:		

8. Employment Data

	EMPLOYEES	HOURS	PAYROLL
Prime Contractor Direct, On-Project Jobs (see guidance for definitions)			
Subcontractor Direct, On-Project Jobs			
Subcontractor Name			
Prime and Subcontractor Totals	0	0	0.00

9. PREPARED BY CEO or Payroll Official:		DATE:
Name:		
Title:		

**LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
REQUIRED CONTRACT PROVISIONS FOR
DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS
(DBE GOAL PROJECT)**

A. AUTHORITY AND DIRECTIVE: The Code of Federal Regulations, Title 49, Part 26 (49 CFR Part 26) as amended and the Louisiana Department of Transportation and Development's (DOTD) Disadvantaged Business Enterprise (DBE) Program are hereby made a part of and incorporated by this reference into this contract. Copies of these documents are available, upon request, from DOTD Compliance Programs Office, P. O. Box 94245, Baton Rouge, LA 70804-9245.

B. POLICY: It is the policy of the DOTD that it shall not discriminate on the basis of race, color, national origin, or sex in the award of any United States Department of Transportation (US DOT) financially assisted contracts or in the administration of its DBE program or the requirements of 49 CFR Part 26. The DOTD shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of US DOT assisted contracts. The DBE program, as required by 49 CFR Part 26 and as approved by US DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification of failure to carry out the approved DBE program, the US DOT may impose sanctions as provided for under 49 CFR Part 26 and may in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C.3801 et seq.).

C. DBE OBLIGATION: The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of US DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the DOTD deems appropriate.

The preceding policy and DBE obligation shall apply to this contract and shall be included in the requirements of any subcontract. Failure to carry out the requirements set forth therein shall constitute a breach of contract and, after notification by DOTD, may result in termination of the contract, a deduction from the contract funds due or to become due the contractor or other such remedy as DOTD deems appropriate. The contractor is encouraged to use the services offered by banks in the community which are owned and controlled by minorities or women when feasible and beneficial. The term DBE is inclusive of women business enterprises (WBE) and all obligations applicable to DBE shall apply to firms certified and listed as WBE.

D. FAILURE TO COMPLY WITH DBE REQUIREMENTS: All contractors and subcontractors are hereby advised that failure to carry out the requirements set forth above shall constitute a breach of contract and, after notification by DOTD may result in rejection of the bid; termination of the contract; a deduction from the contract funds due or to become due the contractor; or other such remedy as DOTD deems appropriate. Failure to comply with the DBE requirements shall include but not be limited to failure to meet the established goal and/or failure to submit documentation of good faith efforts; failure to exert a reasonable good faith effort (as determined by DOTD) to meet established goals; and failure to realize the DBE participation set forth on approved Form CS-6AAA and attachments. Failure to submit Form CS-6AAA and attachments and/or reasonable good faith efforts' documentation within the specified time requirements will result in the Department taking the actions specified in Heading G(6) below. The utilization of DBE is in addition to all other equal opportunity requirements of the contract. The contractor shall include the provisions in Sections B, C and D of these provisions in subcontracts so that such provisions will be binding upon each subcontractor, regular dealer, manufacturer, consultant, or service agency.

E. ELIGIBILITY OF DBE: The DOTD has included as part of the solicitation of bids a current list containing the names of firms that have been certified as eligible to participate as DBE on US DOT assisted contracts. This list is not an endorsement of the quality of performance of the firm but is simply an acknowledgment of the firm's

eligibility as a DBE. This list indicates the project numbers and letting date for which this list is effective. Only DBE listed on this list may be utilized to meet the established DBE goal for these projects.

F. COUNTING DBE PARTICIPATION TOWARD DBE GOALS: DBE participation toward attainment of the goal will be credited on the basis of total subcontract prices agreed to between the contractor and subcontractors for the contract items or portions of items being sublet as reflected on Form CS-6AAA and attachments, in accordance with the DOTD DBE Program, and the following criteria.

(1) Credit will only be given for use of DBE that are certified by the Louisiana Unified Certification Program. Certification of DBE by other agencies is not recognized.

(2) The total value of subcontracts awarded for construction and services to an eligible DBE is counted toward the DBE goal provided the DBE performs a commercially useful function. The contractor is responsible for ensuring that the goal is met using DBE that perform a commercially useful function.

The contractor shall operate in a manner consistent with the guidelines set forth in the DOTD DBE Program. A commercially useful function is performed when a DBE is responsible for the execution of a distinct element of work by actually managing, supervising, and performing the work in accordance with standard industry practices except when such practices are inconsistent with 49 CFR Part 26 as amended, and the DOTD DBE Program, and when the DBE receives due compensation as agreed upon for the work performed. To determine whether a DBE is performing a commercially useful function, the DOTD shall evaluate the work subcontracted in accordance with the DOTD DBE Program, industry practices and other relevant factors. When an arrangement between the contractor and the DBE represents standard industry practice, if such arrangement erodes the ownership, control or independence of the DBE, or fails to meet the commercially useful function requirement, the contractor will not receive credit toward the goal.

(3) A DBE prime contractor may count only the contract amount toward DBE participation for work he/she actually performs and for which he/she is paid. Any subcontract amounts awarded to certified DBE by a DBE prime will also be credited toward DBE participation provided the DBE subcontractor performs a commercially useful function.

(4) A contractor may count toward the DBE goal 100 percent of verified delivery fees paid to a DBE trucker. The DBE trucker must manage and supervise the trucking operations with its own employees and use equipment owned by the DBE trucker. No credit will be counted for the purchase or sale of material hauled unless the DBE trucker is also a DOTD certified DBE supplier. No credit will be counted unless the DBE trucker is an approved subcontractor.

(5) A contractor may count toward the DBE goal that portion of the dollar value with a joint venture equal to the percentage of the ownership and control of the DBE partner in the joint venture. Such crediting is subject to a favorable DOTD review of the joint venture agreement to be furnished by the apparent low bidder before award of the contract. The joint venture agreement shall include a detailed breakdown of the following:

- a. Contract responsibility of the DBE for specific items of work.
- b. Capital participation by the DBE.
- c. Specific equipment to be provided to the joint venture by the DBE.
- d. Specific responsibilities of the DBE in the control of the joint venture.
- e. Specific manpower and skills to be provided to the joint venture by the DBE.
- f. Percentage distribution to the DBE of the projected profit or loss incurred by the joint venture.

(6) A contractor may count toward the DBE goal only expenditures for materials and supplies obtained from DBE suppliers and manufacturers in accordance with the following:

a. The DBE supplier assumes actual and contractual responsibility for the provision of materials and supplies.

b. The contractor may count 100 percent of expenditures made to a DBE manufacturer provided the DBE manufacturer operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the contractor.

c. The contractor may count 60 percent of the expenditures to DBE suppliers who are regular dealers but not manufacturers, provided the DBE supplier performs a commercially useful function in the supply process including buying the materials or supplies, maintaining an inventory, and selling materials regularly to the public. Dealers in bulk items such as steel, cement, aggregates and petroleum products are not required to maintain items in stock, but they must own or operate distribution equipment. The DBE supplier shall be certified as such by DOTD.

d. A DBE may not assign or lease portions of its supply, manufactured product, or service agreement without the written approval of the DOTD.

(7) A contractor may count toward the DBE goal reasonable expenditures to DBE firms including fees and commissions charged for providing a bona fide service; fees charged for hauling materials unless the delivery service is provided by the manufacturer or regular dealer as defined above; and fees and commissions for providing any bonds or insurance specifically required for the performance of the contract.

(8) The contractor will not receive credit if the contractor makes direct payment to the material supplier. However, it may be permissible for a material supplier to invoice the contractor and DBE jointly and be paid by the contractor making remittance to the DBE firm and material supplier jointly. Prior approval by DOTD is required.

(9) The contractor will not receive credit toward the DBE goal for any subcontracting arrangement contrived to artificially inflate the DBE participation.

G. AWARD DOCUMENTATION AND PROCEDURE: This project has specific DBE goal requirements set forth in the Special Provision for DBE Participation in Federal Aid Construction Contracts. The bidder by signing this bid certifies that:

(1) The goal for DBE participation prescribed in the special provisions shall be met or exceeded and arrangements have been made with certified DBE or good faith efforts made to meet the goal will be demonstrated.

(2) Affirmative actions have been taken to seek out and consider DBE as potential subcontractors. Bidders shall contact DBE to solicit their interest, capability, and prices in sufficient time to allow them to respond effectively, and shall retain, on file, proper documentation to substantiate their good faith efforts.

(3) Form CS-6AAA and "Attachment to Form CS-6AAA" and, if necessary, documentation of good faith efforts shall be submitted within 10 business days following the opening of bids to the DOTD Compliance Programs Office. Submittals shall be personally delivered and date and time stamped into the DOTD Compliance Programs Office by the close of business, 10 business days after opening of bids; or mailed to the DOTD Compliance Programs Office by certified mail, return receipt requested and post marked by the 10th business day after the opening of bids. A business day is defined as a normal working day of DOTD.

Should a bidder protest or appeal any matter regarding the bidding or award of a contract in accordance with Subsection 102.13 of the 2006 Standard Specifications (Subsection 102.13 of the 2000 Louisiana Standard Specifications) after the scheduled time of bid opening, the Compliance Programs Section will immediately suspend the ten day requirement for submission of the CS-6AAA and Attachments until further notice and will notify all parties involved of the suspension. Once the protest has been resolved the

Compliance Programs Section will notify the low bidder and issue a date for submission of the CS-6AAA and Attachments.

All attachments to Form CS-6AAA shall include:

- a. The names of DBE subcontractors that will actually participate in meeting the contract goal; and
- b. A complete description of the work to be performed by the DBE including the specific items or portions of items of work, quantities, and unit price(s) of each item; and
- c. The total dollar value of each item that can be credited toward the contract goal; and
- d. Any assistance to be provided to the DBE; and
- e. The original signature of each DBE and the contractor attesting that negotiations are in progress and that it is the intention of the parties to enter into a subcontract within 60 calendar days from the time the contract is finalized between the contractor and DOTD.

It shall be the bidder's responsibility to ascertain the certification status of designated DBEs. An extension of time for submittal of Form CS-6AAA and Attachments will not be granted beyond the stated time. Questionable technical points will be cleared with the DOTD Compliance Programs Office within the time period allowed. If the documentation required is not provided in the time and manner specified, DOTD will take the actions specified in Heading (6) below.

(4) If the apparent low bidder is not able to meet the DBE goal, the DBE firms that can meet a portion of the goal shall be listed on the form CS-6AAA. Form CS-6AAA and attachments shall be completed and submitted in accordance with Heading (3) above 10 business days after opening of bids. Form CS-6AAA shall indicate the DBE participation which has been secured along with documentation of good faith efforts. The apparent low bidder shall document and submit justification stating why the goal could not be met and demonstrate the good faith efforts as shown in Section J.

The DOTD's evaluation of good faith efforts in the pre-award stage will focus only on efforts made prior to submittal of the bid. For consideration, good faith efforts shall include the requirements listed in these provisions as well as other data the contractor feels is relevant.

(5) Form CS-6AAA and attachments, and documentation of good faith efforts, when appropriate, will be evaluated by DOTD in the selection of the lowest responsible bidder. The information provided shall be accurate and complete. The apparent low bidder's proposed attainment of the DBE goal and/or demonstration of good faith efforts will be considered in the award of the contract.

(6) An apparent low bidder's failure, neglect, or refusal to submit Form CS-6AAA and attachments committing to meet or exceed the DBE goal and/or documentation of good faith efforts, shall constitute just cause for forfeiture of the proposal guarantee and the DOTD rejecting the bid, pursuing award to the next lowest bidder, or re-advertising the project. The original apparent low bidder will not be allowed to bid on the project should readvertisement occur.

The apparent low bidder shall forfeit the proposal guarantee unless the bidder can show that the reason for not meeting the requirements given in these DBE Provisions was beyond the bidder's control. The DOTD DBE Oversight Committee will review the bidder's reasons for not meeting these DBE Provisions and will decide if the reasons are sufficient to allow return of the proposal guarantee.

(7) The bidder has the right to appeal the DOTD's findings and rulings to the DOTD Chief Engineer. The bidder may present information to clarify the previously submitted documentation. The decision rendered by the DOTD Chief Engineer will be administratively final. There shall be no appeal to the US DOT. If the DOTD Chief Engineer does not rule in favor of the original apparent low bidder, the new apparent low bidder shall submit, in detail, its subsequent proposed DBE participation within 14 calendar days after notification.

(8) Agreements between the bidder and the DBE, whereby the DBE agrees not to provide subcontracting quotations to other bidders, are prohibited.

H. POST AWARD COMPLIANCE

(1) If the contract is awarded on less than full DBE goal participation, such award will not relieve the contractor of the responsibility to continue exerting good faith efforts. The contractor shall submit documentation of good faith efforts with requests to sublet prior to approval of subcontracting work being performed on the project.

(2) The contractor shall establish a program which will effectively promote increased participation by DBE in the performance of contracts and subcontracts. The contractor shall also designate and make known to the DOTD a liaison officer who will be responsible for the administration of the contractor's DBE program.

(3) The contractor shall enter into subcontracts or written agreements with the DBE identified on Form CS-6AAA and attachments for the kind and amount of work specified. The subcontracting requirements of the contract will apply. The contractor shall submit copies of subcontracts or agreements with DBE to DOTD upon request.

(4) The contractor shall keep each DBE informed of the construction progress schedule and allow each DBE adequate time to schedule work, stockpile materials, and otherwise prepare for the subcontract work.

(5) At any point during the project when it appears that the scheduled amount of DBE participation may not be achieved, the contractor shall provide evidence demonstrating how the goal will be met.

(6) If the contractor is unable to demonstrate to the DOTD's satisfaction that it failed to achieve the scheduled DBE participation due to reasons other than quantitative underruns or elimination of items contracted to DBE and that good faith efforts have been used to obtain the scheduled contract participation, the DOTD may withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages.

(7) When the DOTD has reason to believe the contractor, subcontractor, or DBE may not be operating in compliance with the terms of these DBE provisions, to include, but not be limited to the encouragement of fronting, brokering, or not providing a commercially useful function, the DOTD will conduct an investigation of such activities with the cooperation of the parties involved. If the DOTD finds that any person or entity is not in compliance, the DOTD will notify such person or entity in writing as to the specific instances or matters found to be in noncompliance.

At the option of the DOTD, the person or entity may be allowed a specified time to correct the deficiencies noted and to achieve compliance. In the event that the person or entity cannot achieve compliance, or fails or refuses to do so, the DOTD reserves the right to initiate administrative action against the contractor which may include but not be limited to terminating the contract; withholding a percentage of the contractor's next partial payment equal to the shortfall amount until corrective action is taken; or other action the DOTD deems appropriate. The contractor has the right to appeal the DOTD's finding and rulings to the DOTD Chief Engineer.

The contractor may present additional information to clarify that previously submitted. Any new information not included in the original submittal will not be used in the final determination. The decision rendered by the DOTD Chief Engineer will be administratively final.

(8) To ensure that the obligations under subcontracts awarded to subcontractors are met, the DOTD will review the contractor's efforts to promptly pay subcontractors for work performed in accordance with the executed subcontracts. The contractor shall promptly pay subcontractors and suppliers, including DBE, their respective subcontract amount within 14 calendar days after the contractor receives payment from DOTD for the items satisfactorily performed by the subcontractors in accordance with Louisiana Revised Statute 9:2784. The contractor shall provide the DBE with a full accounting to include quantities paid and

deductions made from the DBE's partial payment at the time the check is delivered. Retainage may not be held by the contractor. Delay or postponement of payment to the subcontractor may be imposed by the contractor only when there is evidence that the subcontractor has failed to pay its labor force and suppliers for materials received and used on the project. Delay or postponement of payment must have written approval by the Project Engineer. Failure to promptly pay subcontractors or to release subcontractors' retainage shall constitute a breach of contract and after notification by the DOTD may result in (1) a deduction from the contract funds due or to become due the contractor, (2) disqualification of a contractor as non-responsive, or (3) any other such remedy under the contract as DOTD deems appropriate. All subcontracting agreements made by the contractor shall include the current payment to subcontractors provisions as incorporate in the contract. All disputes between contractors and subcontractors relating to payment of completed work or retainage shall be referred to the DBE Oversight Committee. Members of the DBE Oversight Committee are: the Deputy Chief Engineer,; the DOTD Compliance Programs Director; and a FHWA Division Representative.

(9) The contractor shall meet the requirements of Subsection 108.01 Subletting of Contract, and shall submit DOTD Forms OMF-1A, Request to Sublet and OMF-2A, Subcontractor's EEO Certification. These forms shall be approved by DOTD before any subcontract work is performed.

(10) DOTD reserves the right to withhold any partial payment from the contractor when it is determined that a DBE is not performing a commercially useful function or that achievement of the goal is in jeopardy. Payment may be withheld in the amount of the DBE goal that is in jeopardy until either the contractor submits to DOTD a revised plan for achieving the contract goal and the plan is approved, or the DBE goal amount in question has been met.

(11) The DOTD will monitor the contractor's DBE involvement during the contract, the level of effort by the contractor in meeting or exceeding the goal requirements in the contract, the contractor's attempts to do so, and the efforts in soliciting such involvement. If, at the completion of the project, the contractor has failed to meet the DBE goal and has not demonstrated good faith efforts or obtained a waiver or reduction of the goal, DOTD will withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages.

I. SUBSTITUTIONS OF DBE FIRMS AFTER AWARD

(1) The contractor shall conform to the scheduled amount of DBE participation.

(2) Contract items designated to be performed by the DBE on Form CS-6AAA and attachments shall be performed by the designated DBE or DOTD approved substitute. Substitutions of named DBE shall be approved in writing by the DOTD Compliance Programs Section. Substituted DBE shall not commence work until the contractor is able to demonstrate that the listed DBE is unable to perform because of default, overextension on other jobs, or other acceptable justification. It is not intended that a contractor's ability to negotiate a more advantageous contract with another subcontractor be considered a valid basis for change. Substitution of DBE will be allowed only when the DBE is unable to perform due to default, overextension on other jobs, or other similar justification. Evidence of good faith efforts exerted by the contractor shall be submitted to DOTD for approval. Pay items of work eliminated from the project will not diminish the contractor's DBE participation.

(3) Under no circumstances will a contractor perform work originally designated to be performed by a DBE without prior written approval from the DOTD Compliance Programs Section.

(4) When a listed DBE is unwilling or unable to perform the items of work specified in the Form CS-6AAA and attachments, the contractor shall immediately notify the DOTD Compliance Programs Section.

When a contractor's request to be relieved of the obligation to use the named DBE results in a DBE Goal shortfall, the contractor shall immediately take steps to obtain another certified DBE to perform an equal amount of allowable credit work or make documented good faith efforts to do so. The new DBE's name and designated work shall be submitted to the DOTD for approval using Form OMF-1A, Request to Sublet, prior to proceeding with the work.

If the contractor is unable to replace a defaulting DBE with another DBE for the applicable item, a good faith effort shall be made to subcontract other items to DBE for the purpose of meeting the goal. The DOTD Compliance Programs Section will determine if the contractor made an acceptable good faith effort in awarding work to DBE firms. Any disputes concerning good faith efforts will be referred to the DBE Oversight Committee. The DOTD Compliance Programs Section may allow a waiver or adjustment of the goal as may be appropriate, depending on individual project circumstances.

J. GOOD FAITH EFFORTS: Good faith efforts are required by the contractor when the DBE goals established for a contract are not met, or at anytime during the contract when achievement of the DBE goal is in jeopardy. It is the contractor's responsibility to provide sufficient evidence for DOTD to ascertain the efforts made. The contractor shall demonstrate good faith efforts to maximize participation by DBE prior to award and during the life of the contract. Good faith efforts include personal contacts, follow-ups and earnest negotiations with DBE. DOTD will consider, at a minimum, the following efforts as relevant, although this listing is not exclusive or exhaustive and other factors and types of efforts may be relevant:

(1) Efforts made to select portions of the work to be performed by DBE in order to increase the likelihood of achieving the stated goal. It is the contractor's responsibility to make a sufficient portion of the work available to subcontractors and suppliers and to select those portions of work or materials consistent with the availability of DBE subcontractors and suppliers to assure meeting the goal for DBE participation. Selection of portions of work are required to at least equal the DBE goal in the contract.

(2) Written notification at least 14 calendar days prior to bid opening which solicits a reasonable number of DBE interested in participation in the contract as a subcontractor, regular dealer, manufacturer, or consultant for specific items of work. The contractor shall provide notice to a reasonable number of DBE that their interest in the contract is being solicited, with sufficient time to allow the DBE to participate effectively. The contractor shall seek DBE in the same geographic area from which it generally seeks subcontractors for a given project. If the contractor cannot meet the goal using DBE from the normal area, the contractor shall expand its search to a wider geographic area.

(3) Demonstrated efforts made to negotiate in good faith with interested DBE for specific items of work include:

a. The names, addresses and telephone numbers of DBE contacted. The dates of initial contact and whether initial solicitations of interest were followed-up personally, by mail, or by phone to determine the DBE interest.

b. A description of the information provided to DBE regarding the nature of the work, the plans and specifications and estimated quantities for portions of the work to be performed.

c. A statement of why additional agreements with DBE were not reached.

d. Documentation of each DBE contacted but rejected and the reasons for rejection. All bids and quotations received from DBE subcontractors whether verbal or written, and the contractor's efforts to negotiate a reasonable price shall be submitted. Rejecting a DBE's bid because it was not the lowest quotation received will not be satisfactory reason without an acceptable explanation of how it was determined to be unreasonable. A statement that the DBE's quotation was more than the contractor's bid price for an item or items will not be acceptable.

e. Copies of all bids and quotations received from DBE subcontractors and an explanation of why they were not used.

- f. Scheduling meetings to discuss proposed work or to walk the job-site with DBE.
- g. Informing DBE of any pre-bid conferences scheduled by the DOTD.
- h. Assisting DBE in obtaining bonding, insurance, or lines of credit required by the contractor.
- i. Evidence of DBE contacted but rejected as unqualified, accompanied by reason for rejection based on a thorough investigation of the DBEs capabilities.
- j. Any additional information not included above which would aid the DOTD in evaluation of the contractor's good faith efforts.

(4) The following are examples of actions that will not be accepted as justification by the contractor for failure to meet DBE contract goals:

- a. Failure to contract with a DBE solely because the DBE was unable to provide performance and/or payment bonds.
- b. Rejection of a DBE bid or quotation based on price alone.
- c. Failure to contract with a DBE because the DBE will not agree to perform items of work at the unit price bid.
- d. Failure to contract with a DBE because the contractor normally would perform all or most of the work in the contract.
- e. Rejection of a DBE as unqualified without sound reasons based on a thorough investigation of their capabilities.
- f. Failure to make more than mail solicitations.

K. RECORD KEEPING REQUIREMENTS: The contractor shall keep such records as are necessary for the DOTD to determine compliance with the DBE contract obligations. These records shall include the names of subcontractors, including DBE; copies of subcontracts; the type of work being performed; documentation such as canceled checks and paid invoices verifying payment for work, services, and procurement; and documentation of correspondence, verbal contacts, telephone calls, and other efforts to obtain services of DBE. When requested, the contractor shall submit all subcontracts and other financial transactions executed with DBE in such form, manner and content as prescribed by DOTD. The DOTD reserves the right to investigate, monitor and/or review actions, statements, and documents submitted by any contractor, subcontractor, or DBE.

L. REPORTING REQUIREMENTS: The contractor shall submit monthly reports on DBE involvement. At the conclusion of each estimate period the contractor shall submit the Form CP-1A, CONTRACTORS MONTHLY DBE PARTICIPATION, to the project engineer to verify actual payments to DBE for the previous month's reporting period. These reports will be required until all DBE subcontracting activity is complete or the DBE Goal has been achieved. Reports are required regardless of whether or not DBE activity has occurred in the monthly reporting period.

Upon completion of all DBE participation, the contractor shall submit the Form CP-2A, DBE FINAL REPORT, to the DOTD Compliance Programs Section with a copy to the project engineer detailing all DBE subcontract payments. When the actual amount paid to DBE is less than the award amount, a complete explanation of the difference is required. If the DBE goal is not met, documentation supporting good faith efforts shall be submitted. Failure to submit the required reports will result in the withholding of partial payments to the contractor until the reports are submitted. All payments due subcontractors which affect DBE goal attainment, including retainage, shall be paid by the contractor before the DOTD releases the payment/performance/retainage bond.

The DOTD reserves the right to conduct an audit of DBE participation prior to processing the final estimate and at any time during the work.

M. APPLICABILITY OF PROVISIONS TO DBE BIDDERS: These provisions are applicable to all bidders including DBE bidders. The DBE bidder is required to perform at least 50 percent of the work of the contract with its own work force in accordance with the terms of the contract, normal industry practices, and the DOTD DBE Program. If the DBE bidder sublets any portion of the contract, the DBE bidder shall comply with provisions regarding contractor and subcontractor relationships. A DBE prime contractor may count only the contract amount toward DBE participation for work that he/she actually performs and any amounts awarded to other certified DBE subcontractors that perform a commercially useful function.

FORM CS-6AAA
BIDDERS ASSURANCE OF DBE PARTICIPATION

S.P.#	Contract Amount: \$
F.A.P.#	DBE Goal Percentage
Letting Date:	DBE Goal Dollar Value: \$

By its signature affixed hereto, the contractor assures the DOTD that one of the following situations exists (check only one box):

- ☐ The project goal will be met or exceeded.
☐ A portion of the project goal can be met, as indicated below. Good faith effort documentation is attached. DBE Goal Participation Amount _____ % \$ _____

The contractor certifies that each firm listed is currently on the DBE list as maintained by DOTD and is certified for the items of work shown on the attachment(s). The contractor having assured that the goal for DBE participation prescribed in the special provisions will be met or exceeded, or that the portion of the DBE goal will be met or exceeded, attests that negotiations are in progress or complete and that a subcontract(s) will be executed with the firm(s) listed below within 60 calendar days after award of contract.

NAME OF DBE FIRM(S)	INTENDED SUBCONTRACT PRICE ¹

¹For supplier list only the value of the subcontract that can be credited toward the DBE goal. This amount shall be equal to the amount shown for the supplier on the Attachment to Form CS-6AAA. Details are listed on the attachment(s) to Form CS-6AAA.

The contractor assessed the capability and availability of named firm(s) and sees no impediment to prevent award of subcontract(s) as described on the attachments.

The contractor shall evaluate the subcontract work or services actually performed by the DBE to ensure that a commercially useful function is being served in accordance with the Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts. The contractor understands that no credit toward the DBE goal will be allowed for DBE that do not perform a commercially useful function. The contractor has a current copy of the DOTD DBE Program Implementation Guide which details the methods of operation that are acceptable on projects containing DBE goals. Copies of this guide may be obtained by calling the DOTD Compliance Programs Section at (225) 379-1382.

NAME OF CONTRACTOR	
AUTHORIZED SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
CONTRACTOR'S DBE LIAISON OFFICER (typed or printed name)	
PHONE NUMBER	
DATE	TAX ID#

06/08

ATTACHMENT TO FORM CS-6AAA

Contractor shall submit a separate attachment for each DBE listed on Form CS-6AAA.

S.P.#	F.A.P.#
NAME OF DBE	
PHONE #	CONTACT PERSON:

Fully describe the work to be performed (furnish materials and install, labor only, supply only, manufacture, hauling, etc.), quantity, unit price, and dollar value for each item to be subcontracted to the DBE listed below.

ITEM NO.	QUANTITY/UNIT PRICE/DESCRIPTION OF WORK TO BE PERFORMED	\$ VALUE

Describe the types of assistance, if any, the contractor will provide to any DBE on this project.

The contractor and DBE subcontractor attest that a subcontract will be executed for the items of work listed above. The contractor acknowledges that it will only receive credit toward the DB goal if the subcontractor performs a commercially useful function. The DBE understands that it is responsible for performing a commercially useful function.

DBE CONTRACTOR'S SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
DATE	TAX ID#
PRIME CONTRACTOR'S SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
DATE	

06/08

FORM CP-1A
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
CONTRACTOR'S MONTHLY DBE PARTICIPATION

STATE PROJECT NO.	CONTRACTOR:
FEDERAL AID PROJECT NO.	
ESTIMATE NO.	REPORT PERIOD: _____ TO _____

DOTD CERTIFIED DBE SUBCONTRACTOR OR SUPPLIER	ITEMS PERFORMED AND PAID THIS ESTIMATE PERIOD	AMOUNT PAID THIS MONTH ¹	TOTAL PAID TO DATE ¹

¹For suppliers, list total amount paid and the 60 percent value counted toward the goal.

This report covers the previous estimate period and shall be submitted to the Project Engineer with the current month's pay estimate. Estimates will be withheld until required form is submitted. Questions should be directed to the DOTD Compliance Programs Section at (225) 379-1382.

The Contractor certifies that the above amounts were paid to the listed DBEs and that documentation of these payments is available for inspection.

Project Engineer has reviewed this form. _____ (Signature of Project Engineer).

Authorized Signature	
Typed or Printed Name	
Title	
Phone No.	
Date	

06/08

FORM CP-2A

STATE PROJECT NO.	DBE GOAL AMOUNT: \$	CONTRACTOR:
FEDERAL PROJECT NO.	CONTRACT AMOUNT: \$	
PARISH(ES)	LETTING DATE:	

[illegible]

This is to certify that \$_____ has been paid to Disadvantaged Business Enterprise Subcontractors/Suppliers listed above.

Authorized Signature
Typed or Printed Name
Title
Date

Parish or County _____ State of _____

Subscribed and sworn to, before me, this _____ day of _____, A.D. 20 _____

Notary Public

My commission expires: _____

06/08

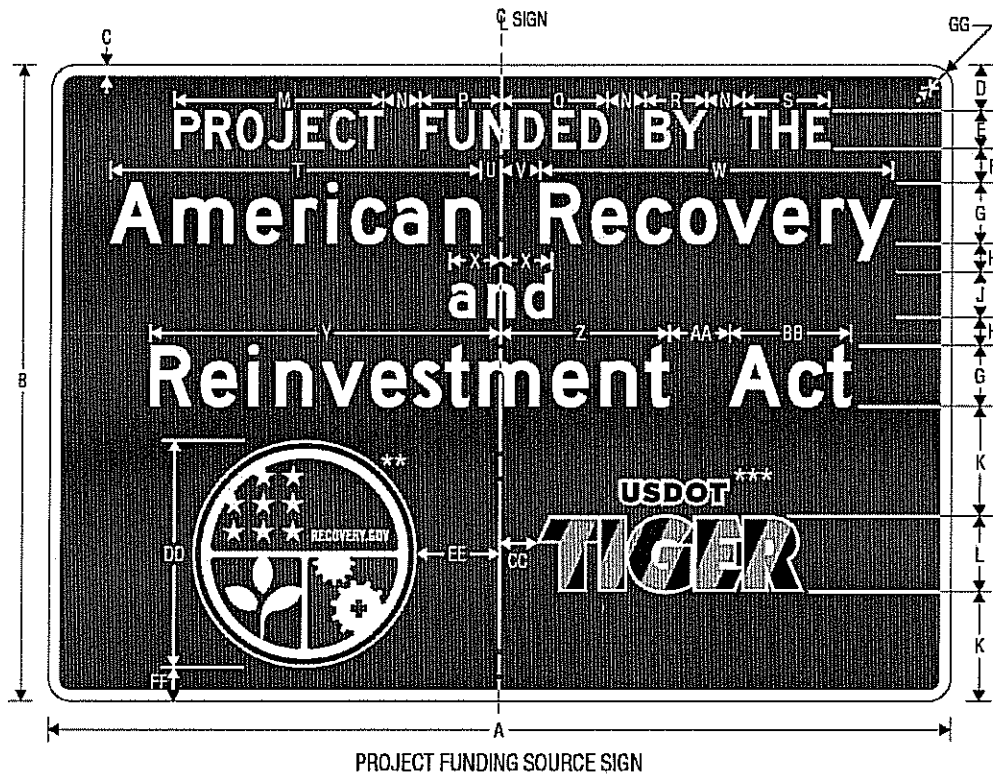
3/23/2009

**PROJECT FUNDING SOURCE SIGN ASSEMBLY
AMERICAN RECOVERY AND REINVESTMENT ACT
SIGN LAYOUT DETAILS**



PROJECT FUNDING SOURCE
SIGN ASSEMBLY

PROJECT FUNDING SOURCE SIGN ASSEMBLY AMERICAN RECOVERY AND REINVESTMENT ACT SIGN LAYOUT DETAILS



NOTE: SIGN SHALL NOT BE INSTALLED WITHOUT
PROJECT FUNDING SOURCE PLAQUE (SEE SHEET 3).

Dimensions in inches

A	B	C	D	E	F	G	H	J	K	L	M	N	P
120	84	1.5	6	5 D	4.5	8 D*	3.75	6 D* (45 LC)	14.5	10	27.917	5	10.831
84	60	1	5	4 C	3.5	6 C*	3	4 D* (6 LC)	9.25	7	19.047	4	7.362

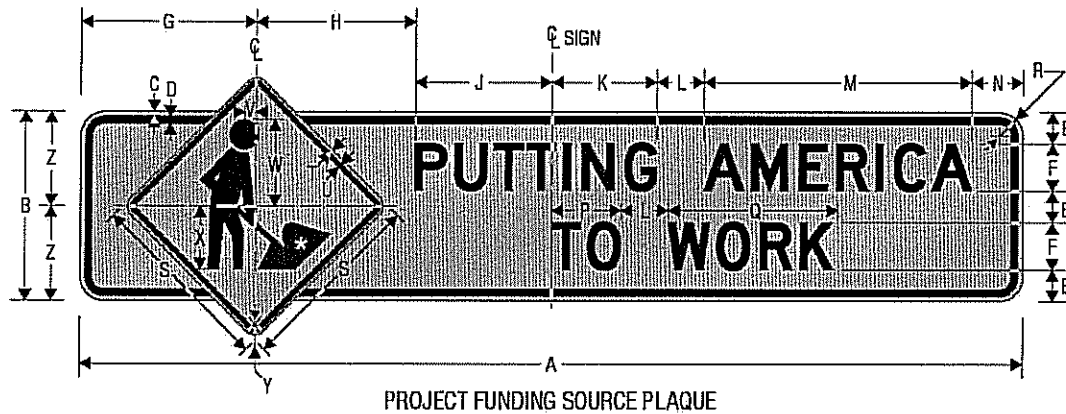
Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD
14.087	8.106	11.556	49.42	2.742	5.258	46.904	6.812	46.76	22.472	8	16.288	5	30
9.484	5.162	7.763	31.722	2.415	3.585	30.552	4.542	30.911	14.737	6	10.175	4	21

EE	FF	GG
11	4.5	3
7.5	2.25	2.25

* Increase character spacing 50%
** See Pictograph page 4
*** See Pictograph page 5

COLORS: LEGEND, BORDER — WHITE (RETROREFLECTIVE)
BACKGROUND — GREEN (RETROREFLECTIVE)

PROJECT FUNDING SOURCE SIGN ASSEMBLY AMERICAN RECOVERY AND REINVESTMENT ACT SIGN LAYOUT DETAILS



NOTE: PLAQUE SHALL NOT BE INSTALLED
WITHOUT SIGN (SEE SHEET 2).

* See *Standard Highway Signs*
Page 6-59 for symbol design.

Dimensions in Inches

A	B	C	D	E	F	G	H	J	K	L	M	N	P
120	24	0.625	0.875	4	6 D	22.349	20.370	17.281	13.28	6	34.22	6.5	8.765
84	18	0.375	0.625	3.5	4 D	16.607	15.686	9.707	10.667	4	22.813	5	5.843

Q	R	S	T	U	V	W	X	Y	Z
21.013	3	24	0.375	0.625	1.5	11	8	1.5	12
14.009	2.25	18	0.375	0.625	1	7	6	1.5	9

COLORS: LEGEND, BORDER — BLACK
BACKGROUND — ORANGE (RETROREFLECTIVE)

3/23/2009

**PROJECT FUNDING SOURCE SIGN ASSEMBLY
AMERICAN RECOVERY AND REINVESTMENT ACT
SIGN LAYOUT DETAILS**

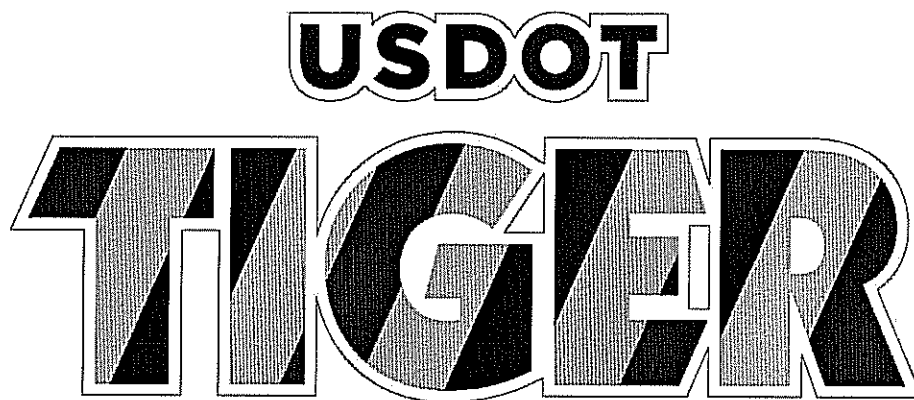


RECOVERY
Vector-Based, Vinyl-Ready Pictograph

COLORS: LEGEND, OUTLINE	— WHITE (RETROREFLECTIVE)
BORDER	— BLUE (RETROREFLECTIVE)
BACKGROUND (UPPER)	— BLUE (RETROREFLECTIVE)
BACKGROUND (LOWER RIGHT)	— RED (RETROREFLECTIVE)
BACKGROUND (LOWER LEFT)	— GREEN (RETROREFLECTIVE)

3/23/2009

**PROJECT FUNDING SOURCE SIGN ASSEMBLY
AMERICAN RECOVERY AND REINVESTMENT ACT
SIGN LAYOUT DETAILS**



USDOT TIGER
Vector-Based, Vinyl-Ready Pictograph

COLORS: OUTLINE	— WHITE (RETROREFLECTIVE)
USDOT LEGEND	— BLACK
TIGER DIAGONALS	— BLACK, ORANGE (RETROREFLECTIVE)

General Decision Number: LA080014 03/13/2009 LA14

Superseded General Decision Number: LA20070040

State: Louisiana

Construction Type: Highway

Counties: Jefferson, Orleans, Plaquemines, St Bernard, St Charles, St James, St John the Baptist and St Tammany Counties in Louisiana.

HIGHWAY CONSTRUCTION PROJECTS (Does not include building structures in rest area projects)

Modification Number	Publication Date
0	02/08/2008
1	05/09/2008
2	06/20/2008
3	07/18/2008
4	09/05/2008
5	01/16/2009
6	02/13/2009
7	03/13/2009

CARP1098-005 02/01/2006

ST. JAMES PARISH (North of the Mississippi River)

	Rates	Fringes
PILEDRIVERMAN.....	\$ 19.92	5.65

CARP1846-002 02/01/2006		

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES (South of the Mississippi River), ST. JOHN THE BAPTIST, AND ST. TAMMANY PARISHES

	Rates	Fringes
PILEDRIVERMAN.....	\$ 19.92	5.00

* ELEC0130-010 12/01/2008		

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES, AND ST. JOHN THE BAPTIST PARISHES

	Rates	Fringes
ELECTRICIAN (including traffic signal wiring and installation).....	\$ 25.00	8.33

* ELEC1077-007 03/01/2009

ST. TAMMANY PARISH

	Rates	Fringes
ELECTRICIAN (including traffic signal wiring and installation).....	\$ 21.50	6.26

ENGI0406-015 07/01/2008

	Rates	Fringes
POWER EQUIPMENT OPERATOR Asphalt/Aggregate Spreader..	\$ 20.76	5.70

IRON0058-004 06/01/2008

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 19.40	6.82

SULA2004-014 07/30/2004

	Rates	Fringes
CARPENTER (including formbuilding/formsetting).....	\$ 13.42	3.04
Cement Mason/Concrete Finisher...	\$ 13.24	1.68
IRONWORKER, REINFORCING.....	\$ 15.84	3.47

Laborers

Asphalt Raker.....	\$ 10.13	0.18
General.....	\$ 9.26	1.14
Guardrail.....	\$ 8.81	1.80
Mason Tender.....	\$ 8.51	1.20
Pipelayer.....	\$ 9.99	1.20
Striping/Pavement Marker includes paint striping and attachment of reflector buttons.....	\$ 8.24	1.20
Traffic Control including flagger, sign placement, barricades, and cones.....	\$ 8.39	1.80

Painter, Brush, Spray and Roller.....	\$ 14.16	2.03
--	----------	------

Power Equipment Operators

Asphalt Paving Machine.....	\$ 14.38	0.18
Asphalt Screed.....	\$ 13.76	2.20
Backhoe/Excavator.....	\$ 13.93	3.00
Broom/Sweeper.....	\$ 12.78	2.92

Bulldozer.....	\$ 13.58	0.00
Crane.....	\$ 17.20	3.30
Front End Loader.....	\$ 13.31	0.00
Mechanic.....	\$ 13.53	2.92
Milling/Cold Planing Machine includes Rotomill and CMI Cutter.....	\$ 15.50	0.00
Motor Grader/Blade.....	\$ 14.42	3.02
Oiler.....	\$ 13.91	2.37
Post Driver.....	\$ 13.73	0.00
Roller.....	\$ 13.11	3.30
Trackhoe.....	\$ 11.00	0.00
Trenching/Boring Machine....	\$ 12.51	0.00
Truck drivers		
Dump (all types).....	\$ 10.64	0.18
Flatbed.....	\$ 10.87	0.00
Lowboy.....	\$ 13.24	0.00
Pickup.....	\$ 10.60	0.00
Water.....	\$ 12.00	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial

contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

STATE PROJECT NO. 742-36-008

F.A.P. NO. 6033(009)

CITY OF NEW ORLEANS DPW NO. 91-ST-04

EARHART BOULEVARD (SEGMENT I)

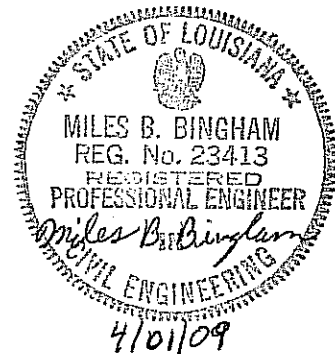
(HAMILTON STREET – PINE STREET)

ORLEANS PARISH

TECHNICAL SPECIFICATIONS

FINAL PLANS

APRIL 2009



**URS Corporation
3500 N. Causeway Boulevard, Suite 900
Metairie, Louisiana 70002**

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

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STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

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STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

ITEM S-001, GEOGRID

GENERAL PROVISIONS

This item consists of furnishing and placing geogrid reinforcement in the areas shown on the plans prior to the placement of the base course.

MATERIALS

GENERAL REQUIREMENTS

The geogrid shall be a biaxially oriented polymer grid structure composed of polypropylene or high density polyethylene with apertures designed to interlock with the surrounding fill material. The joints at the crossover points of grid elements must be integrally connected through extrusion of the mesh itself, welded or interwoven in such a manner that the elements will not separate under handling and construction activities or under dynamic loads anticipated over the life of the structure. The geogrid shall be resistant to damage during construction, including ultraviolet degradation, and it shall have long-term resistance to chemical and biological degradation caused by the materials being reinforced.

DETAILED REQUIREMENTS

TABLE A		
PROPERTY	TEST METHOD	REQUIREMENTS
Aperture Size	I.D. Caliper	1.0 – 2.0 inches
Open Area, min.	COE Method	70%
Flexural Rigidity, min. both directions	ASTM D1388-64	250,000 mg-cm
Tensile Modules, min.	GRI GG1-87	14,000 lb/ft
Junction Efficiency, min.	GRI GG2-87	90%

NOTE: 1) All numerical values represent minimum average roll values required in the designation direction.

PROOF OF COMPLIANCE

The Contractor shall be required to furnish the following manufacturer's certifications:

Minimum certifiable values for physical requirements identified in Table "A".

Documented results from empirical testing in a performance based system test under controlled conditions including asphalt surface course, base course, geogrid and subgrade with loading conditions that model highway loading. These results shall demonstrate the structural contribution of the geogrid.

TECHNICAL SPECIFICATIONS

A design methodology that incorporates the structural contribution of the geogrid with a direction correlation to the increased overall performance of the pavement section.

The increased performance due to the geogrid must meet or exceed the increase required by the design.

The Engineer reserves the right to randomly sample and test the geogrid material being used by the Contractor.

CONSTRUCTION METHODS

The geogrid shall be placed in continuous sheets parallel to the centerline. Adjacent sheets of grid material shall be overlapped a minimum of 18 inches. Care shall be taken to ensure that geogrid sections do not separate during construction.

The geogrid shall be cut to conform to curved sections so as to maintain parallel placement to centerline. Care shall be taken to ensure that excessive buckling of the grid material does not occur. Excess material quantity, if any, required for making curves shall be at no direct pay.

Tracked equipment will not be allowed to operate directly on the grid material. Damaged fabric shall be either removed and replaced with new geogrid or covered with a second layer of grid material extending three feet in each direction from the damaged area.

Each geogrid roll shall be labeled or tagged to provide product identification sufficient for field inventory and quality control purposes. Rolls shall be stored in a manner which protects them from the elements. If stored, outdoors, they shall be elevated and protected from ultraviolet light.

MEASUREMENT AND PAYMENT

Measurement of "Geogrid" shall be by the square yard in place and accepted.

Payment will be made at the contract unit price under:

Item S-001, Geogrid, per Square Yard.

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

ITEM S-002, TEMPORARY CONSTRUCTION ENTRANCE

GENERAL PROVISIONS

This item consists of constructing a temporary construction entrance in accordance with plan details and the following requirements.

MATERIALS

Temporary construction entrances shall consist of stone or recycled portland cement concrete which shall conform to Subsection 711.02, 2 lb (1 kg) class.

The geotextile fabric shall conform to Section 1019 for use under riprap.

CONSTRUCTION METHODS

The geotextile fabric underliner shall be placed at the locations designated for temporary construction entrances before stone or recycled portland cement concrete is placed. The stone or recycled portland cement concrete shall be placed and compacted to the required thickness as directed. The geotextile fabric for the underliner shall be supplied at no direct pay.

If additional measures are required to remove mud from truck tires, such as wash racks, etc., they shall be placed as directed at no direct pay.

MEASUREMENT AND PAYMENT

Measurement of "Temporary Construction Entrance" will be per each complete, in place and accepted.

Payment will be made at the contract unit price under:

Item S-002, Temporary Construction Entrance, per Each.

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

ITEM S-102, SAW CUTTING

GENERAL PROVISIONS

This item consist of saw cutting to ensure against ragged connections between old and new work , saw cutting will be required at sidewalks, driveways and/or at other construction areas as designated on the plans and/or as designated by the project engineer.

CONSTRUCTION METHODS

The cut in the pavement shall be made to a depth of 1-½ to 2 inches with an appropriate saw to ensure the straight vertical edge for the upper portion on the patch. After the edges have been cut, the areas to be removed are broken in small pieces with pneumatic chisels or drills and the material removed. The resulting broken edge of the pavement below the sawcut is left fairly rough and irregular but in approximately vertical plane so that it will provide aggregate interlocks between the patch and existing pavement.

MEASUREMENT AND PAYMENT

Measurement of "Saw Cutting" will be by the inch depth per linear foot.

Payment will be made at the contract unit price under:

Item S-102, Saw Cutting, per inch depth per Linear Foot.

**ITEM S-103, REINFORCED CONCRETE BUS PAD (9" THICK, 4000 PSI)
(12' X 60')**

GENERAL PROVISIONS

This work consist of constructing reinforced concrete bus pads in accordance with the plan details.

CONSTRUCTION METHODS

The 9" thick (4000 PSI) portland cement concrete pavement shall conform to sections 54 - 65 of the City of New Orleans' "General Specifications For Street Paving".

Installation shall include furnishing and placing all materials including the 6 X 12 0/1 welded wire fabric and construction of the required joints.

MEASUREMENT AND PAYMENT

Measurement of "Reinforced Concrete Bus Pad (9" Thick, 400 PSI) (12' X 60') will be by the square yard, in place and accepted.

Payment shall be made at the contract unit price per under:

Item S-103, Reinforced Concrete Bus Pad (9" Thick, 4000 PSI) (12' X 60'), per Square Yard.

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

ITEM S-104, RELOCATE LIGHT STANDARD

GENERAL PROVISIONS

This work consist of relocating all light standards, as indicated on the plans, under the direction of the City Of New Orleans' DPW and in accordance with City installation procedures.

CONSTRUCTION METHODS

The Contractor shall be responsible for coordinating with the City of New Orleans' DPW for establishing the relocated positions of light standards and for the inspection of the installation. The Contractor shall receive approval from the City prior to relocating the street lights.

Installation will include all the labor, equipment and materials necessary for the relocation of the lights as indicated on the plans or as directed by the City of New Orleans' DPW.

MEASUREMENT AND PAYMENT

Measurement of "Relocate Light Standard" will be per each, in place and accepted.

Payment will be made at the contract unit price under:

Item S-104, Relocate Light Standard, per Each.

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ITEM S-105, EXPLORATION AND LOCATION OF ALL EXISTING UTILITIES

GENERAL PROVISIONS

This item consists of all work associated with field locating existing utilities within the project limits.

CONSTRUCTION METHODS

This work will involve but not be limited to: contacting all utilities, assisting utilities, if necessary, in locating their utilities, excavating near utilities to determine location and depth and backfilling all exploratory excavations.

Upon award of the contract, the Contractor and Engineer shall jointly determine locations requiring exploration.

An exploration hole will consist of an excavated area up to ten (10') feet long, five (5') feet wide and up to nine (9') feet deep. Approval to proceed with exploratory excavations shall be obtained from the Engineer for each location as determined above.

The Contractor shall furnish all materials, tools, equipment, labor, etc. required to perform all work as described above.

MEASUREMENT AND PAYMENT

Measurement of "Exploration and Location of Existing Utilities will be per exploration hole excavated and backfilled.

Payment will be made at the contract unit price under:

Item S-105, Exploration and Location of all Existing Utilities, per Each.

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ITEM S-106, REMOVE AND SALVAGE LIGHT STANDARD

GENERAL PROVISIONS

This work consist of removing and salvaging light standards in accordance with the plans and/or as directed by the Project Engineer.

CONSTRUCTION METHODS

The Contractor shall remove light standards, designated to be removed and deliver them to the City of New Orleans' Maintenance Yard. The Contractor shall coordinate delivery of the light standards with the City of New Orleans.

The Contractor shall furnish all materials, tools, equipment, labor, etc. required to perform all work as described above.

MEASUREMENT AND PAYMENT

Measurement of "Remove and Salvage Light Standard" shall be per each, removed and delivered to the City of New Orleans' Maintenance Yard.

Payment will be made at the contract unit price under:

Item S-106, Remove and Salvage Light Standard, per Each.

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ITEM S-107, STREET LIGHT CABLE IN CONDUIT

GENERAL PROVISIONS

This item consists of supplying and installing new conduit and cable for street lights in accordance with the following requirements:

MATERIALS

The conduit shall consist of Schedule 40 PVC and the cable shall be #6-3 with ground.

CONSTRUCTION METHODS

The conduit and cable shall be installed including all required connections in accordance with local electrical codes.

MEASUREMENT AND PAYMENT

Measurement of "Street Light Cable in Conduit" will be per linear foot, in place and accepted.

Payment will be made at the contract unit price under:

Item S-107, Street Light Cable in Conduit, per Linear Foot.

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ITEM S-108, EMERGENCY ELECTRICAL SPLICES

GENERAL PROVISIONS

This item consists of supplying and installing an "Emergency Electrical Splices" for damaged street light cables.

CONSTRUCTION METHODS

Emergency electrical splice shall consists of a splice rated for direct burial and will include a UF cable and splice boxes as necessary and shall conform to local electrical codes.

MEASUREMENT AND PAYMENT

Measurement of "Emergency Electrical Splices" will be per each complete, in place and accepted.

Payment will be made at the contract unit price under:

Item S-108, Emergency Electrical Splices, per Each.

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**ITEM S-120 THROUGH S-146; S-149; AND S-152 THROUGH S-163,
TRAFFIC SIGNAL EQUIPMENT AND INSTALLATION**

GENERAL PROVISIONS

This work consists of furnishing and installing all necessary materials and equipment to complete an in-place traffic signal system, all as shown on the plans, standard or special details, and as set forth in the following specifications.

Unless otherwise indicated on the plans, Contractor furnished materials shall be new.

The signals, controller and appurtenances shall be located as shown on the plans or as directed by the Engineer.

All incidental parts which are not shown on the plans, or specified herein or in the special provisions, and -which are necessary to complete the traffic signal or other- electrical systems shall be furnished and installed as though such parts were shown on the plans or specified herein. All systems shall be complete and in operation to the satisfaction of the Engineer at the time of completion of the work.

REGULATIONS AND CODE

STANDARD SPECIFICATIONS

Except as otherwise specifically required by the Plans or these Special Provisions, all work on this project shall fully comply with the *City of New Orleans General Specifications for Street Paving*, 1999 (Revision 10/1/2001) Edition, (also referred to herein as the "General Specifications") and the *City of New Orleans Standard Plans for Street Paving*, (also referred to herein as the "Standard Plans"). Where specifically noted in these Special Provisions, materials and workmanship shall conform to the requirements of the *Louisiana Department of Transportation and Development Standard Specifications for Roads and Bridges*, 2006 Edition, (also referred to herein as the "Standard Specifications").

In the event of conflict between these Special Provisions and the General Specifications, Standard Specifications, and/or the Standard Plans, the requirements of these Special Provisions shall govern.

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COMPLIANCE WITH OTHER SPECIFICATIONS AND STANDARDS

All electrical equipment shall conform to the standards of the *National Electrical Manufacturers Association (NEMA) Standards Publication TS-1, 1989* (also referred to herein as the "NEMA TS-1, 1989"), *National Electrical Manufacturers Association (NEMA) Standards Publication TS-2, 1992* (also referred to herein as the "NEMA TS-2, 1992"), the Underwriters' Laboratories, Inc. (UL), and the Electronic Industries Association (EIA), wherever applicable. All materials and workmanship shall conform to the requirements of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD), *National Electrical Code* (NEC), *National Electrical Safety Code* (NESC), *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, Standards of the American Society for Testing and Materials (ASTM), American National Standards Institute, Inc. (ANSI), Rural Electrification Administration (REA), International Municipal Signal Association (IMSA), and any City codes and ordinances which may apply.

Wherever reference is made to any such specification, manual, code, or standard, the reference shall be construed to mean the version, as revised, that is in effect on the date of advertising for bids on this project.

SUBMITTALS AND AS-BUILT DOCUMENTATION

EQUIPMENT LIST

Within 45 days following award of contract, the Contractor shall submit to the Engineer for approval a list of major equipment and materials which he proposes to install. The list shall include all material that is identified on the Plans or in these Special Provisions, including detailed scale drawings of any non-standard or special equipment and any proposed deviation from the Plans.

SUBMITTAL DATA

Prior to the purchase or fabrication of any equipment or material for use on this project, submit for review by the Engineer catalog cut sheets, descriptive manuals, brochures, and specifications for all standard, off-the-shelf items. These documents shall contain sufficient technical data for the Engineer to evaluate the system proposed. The quality, function, and capability of each deliverable item shall be described. Documents shall be originals or copies equal to originals. Shop drawings for each fabricated item shall also be submitted. These drawings shall contain all information required for complete fabrication in accordance with the Contract Documents, such as: materials, welds, finish, etc. Shop drawings shall be on sheets 550 mm in height and 900 mm long.

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Provide four (4) copies of 213 mm x 275 mm submittals, and four copies of shop drawings. One of these will be returned to the Contractor with appropriate notations within thirty (30) calendar days.

The purpose of the submittal data is to show specifically and in detail how the Contractor intends to satisfy the requirements of the Contract Documents. If preprinted literature is utilized to satisfy some or all of these requirements, no statements on the literature should conflict with the Contract Documents. Cross off or initial any such statements and attach an appropriate statement clearly indicating how the requirements of the Contract Documents will be fulfilled. Clearly label each item of submittal data with the bid item number or other description of the item(s) to which it applies.

Each submittal must contain sufficient information and details to permit the Engineer to fully evaluate the particular component. Submittals which are, in the judgement of the Engineer, insufficient to permit proper evaluation will not be reviewed. Do not deviate from submittals marked "Accepted" or "Accepted as Noted" without the written consent of the Engineer. The City will not be liable for any material purchased, labor performed, or delay to the work prior to the approval of the equipment.

In order to expedite the submittal data process and equipment review, take care to address all of the requirements of the Contract Documents in the submittal data, leaving nothing to assumption, and clearly addressing the functional and technical interrelationships among the various components.

The Contractor should plan for any given package of submittal data to be in the hands of the Engineer for 30 calendar days. The Engineer will date stamp the letters of transmittal for all such data and return a copy of the stamped letters to the Contractor with the submittal data for his records. Following review of the submittal data, the Engineer will return to the Contractor one copy of the submittal marked "Accepted", "Accepted as Noted" or "Rejected". The Engineer will also mark each item which must be resubmitted. Proceed with any items marked "Approved" and items marked "Approved as Noted" if resubmission is not required. Do not proceed with any items which are marked "Rejected" or for which resubmission is required, but proceed immediately to correct said items and resubmit them for review. No time extensions will be granted to the Contractor as a result of the need to resubmit items for review.

Develop a submittal data transmittal form and submit same to the Engineer for approval as to format. Assign a submittal number to each submittal package, to be transmitted under the cover of the approved form. The numbering system must be logical and ascending. Specifically list on the transmittal sheet each item or element included. (An element is one part of several parts of information related to the same bid item.) When drawings are submitted, list each separately.

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Completely fill out all portions of the transmittal sheet except those reserved for use by the Engineer. The transmittal sheet will be used by the Engineer to indicate the action taken on the submittal package, and a copy of the transmittal sheet showing these actions will be returned to the Contractor. Transmit only clearly related items under the same transmittal sheet.

Approval by the Engineer of a catalog cut sheet and/or shop drawing does not relieve the Contractor of any of his responsibility under the Contract for the successful completion of the work in conformity with the requirements of the Contract Documents.

INSTALLATION DOCUMENTATION

Documentation Prior to Delivery:

Provide instructions and installation manuals for each item of equipment. Provide all relevant manuals available from the manufacturer. The manuals shall contain sufficient information to operate and maintain the equipment including schematic, wiring, and interconnection diagrams; complete instructions for proper installation including equipment outlines, mounting, weight, power, and cooling requirements; a complete parts list and a list of recommended spares. Submit manuals to the Engineer and have them approved at least thirty days prior to delivery of equipment to the site.

Documentation Prior to Installation:

Submit an installation summary for each field equipment location. This summary shall include the following information:

Equipment complement

Cable lists specifying cable, fiber or conductor, and connector and pin assignments for all signal, power and ground leads.

A complete splicing chart for each cabinet, covering every cable entering the cabinet.

Documentation After Installation:

Provide and attach to the inside of each control cabinet and service panel door a printed set of construction drawings showing wiring diagrams and field adjustments, with a brief description of all major components. Attach drawings to the door with stainless steel fasteners and protect from weather with a waterproof enclosure. Provide a reproducible mylar original of each set of control cabinet and service panel drawings to the City.

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Cabinet documentation shall consist of three (3) copies of the cabinet wiring diagram and field wiring diagram. These prints shall be full size and completely legible. Where possible, diagrams shall be a scale picture image of the cabinet layout.

Diagrams shall show the complete wiring and labeling of all cabinet components, switches, terminal connections, connecting cable connections, fan connections, light fixture connections, flash transfer relays, lightning arrestors, surge protectors, load switch panels, terminals and all other control functions. Each item shall be clearly identified by its function.

All components in the cabinet shall be located according to their function and in a manner that they may easily be found on the wiring diagram.

Field wiring on the cabinet wiring diagrams shall be designated in accordance with Plan and Specification requirements. Association of phase number with their designated traffic movement shall be clearly indicated on the wiring diagram.

Sequence diagrams are included on the Plans for each controller required. The same type sequence diagram shall be placed on the inside of the cabinet door. The diagram shall be legible, waterproof and tightly affixed to the door.

Documentation Prior to Purchasing or Writing the Software:

Prior to purchasing or writing any controller software, submit a draft user's manual for that software. The controller software shall be compatible with the existing controller software, and with the existing central control software at the TCC. The City will furnish documentation of communication formats and protocols for the existing software. Once approved, the manuals shall function as software specifications, and the elimination of significant features described in a manual shall require the approval of the Engineer.

Documentation Prior to Software Testing:

The Contractor shall furnish six sets of the following documentation for all software that is not a widely-used standard product:

User's Manual: Revise to correspond to the actual operation of the software.

Programmer's Manual: By use of flow charts and text, this documentation shall explain the program's internal operation, troubleshooting and error recovery procedures, disk files, and communications. The documentation

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shall include flow charts covering the operation of every subroutine (or procedure).

Source Listing: The listings shall include descriptive comments to facilitate the understanding of the program operation. Cross-reference lists shall be provided to facilitate program changes. The source code shall also be provided in ASCII format on diskette.

AS-BUILT DOCUMENTATION

Provide documentation of the work, as-built, as indicated below prior to acceptance of the work. Provide marked-up blueprints of the contract plan sheets and sepia of shop drawings showing actual installations or new information which is recognized to be of importance to the City, but was for some reason not shown on either the contract drawings or shop drawings. All documentation must be approved by the Engineer prior to final acceptance of the project.

Show all construction changes in detail on the plan sheets, including: final location and depth of conduits, junction boxes, and equipment cabinets; wiring external to equipment cabinets; locations of cable splice points; system detector locations; and communications cable termination. Correct any errors to the as-built blueprint plans upon review by the Engineer prior to final acceptance of the project.

In addition to the documentation specified above, prints of schematic diagrams applicable to the equipment contained therein shall be provided by the Contractor in a waterproof, opaque, resealable holder and mounted within each new cabinet.

MILL TEST REPORTS AND CERTIFICATIONS

MILL TEST REPORTS

Mill Test Reports (MTRs) shall be required for major structural items, and shall include both physical and chemical descriptions of the materials as supplied to the fabricator. When physical properties are altered during the fabricating, MTRs covering chemical composition shall be supplemented by certified test reports indicating the physical properties of this material after fabrication. MTRs shall be required for:

- Anchor Bolts
- Manhole Covers and Frames
- Traffic Signal Poles, Mast Arms, and Pedestals

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CERTIFICATION OF CONFORMANCE TO THE SPECIFICATIONS

Certification of Conformance to the Specifications shall be required for :

- Galvanizing
- Cable and Wire
- Traffic Signs (Aluminum and Reflective Sheeting)
- Program Heads
- Traffic Signal Controllers and Cabinets

TRAFFIC SIGNAL ITEMS

CONCRETE FOUNDATIONS:

General:

Concrete foundations shall be installed as shown and described in the Plans. This work shall include all necessary excavations, forming, placing of reinforcement steel, placing of anchor bolts, placing of ground rods, placing of conduits, pouring of concrete, neatly finishing exposed areas of concrete, backfilling, removing excess materials and cleaning up the work area when completed. This work shall also include sizing foundations for the support poles described herein. The Contractor shall furnish all materials and equipment to complete the installations as shown and described in the Plans.

Ground Wire and Ground Rods:

Ground rods shall be of copper-weld or an equivalent rust-resisting material of the length and diameter shown on Plans. Clamps for ground rods shall be copper. Ground wire shall be AWG No. 6 bare copper wire.

Concrete:

Concrete for bases shall be Class A concrete conforming to Section 901 of the Standard Specifications.

Reinforcement Steel:

Reinforcement steel shall conform to Section 806 of the Standard Specifications.

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Anchor Bolts:

Anchor bolts for concrete foundations shall be provided by the Contractor and shall conform to the foundation detail drawings and specifications contained herein.

Pedestal Pole Bases:

Anchor bolts for pedestal bases shall be 19 mm by 450 mm. Four (4) anchor bolts are required per concrete base. Each anchor bolt shall be supplied with two nuts and two flat washers. The embedded end of anchor bolts shall have a 75 mm L bend, and the exposed end shall have a minimum of 100 mm of threads. Anchor bolts shall conform to ASTM-A36 and shall be galvanized to conform to ASTM-A153.

Mast Arm Pole Bases:

Anchor bolts for mast arms shall conform to the requirements of AASHTO M314 Grade 55. The upper 305 mm of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts. A cast nut cover shall be provided for each anchor bolt. Each nut cover shall be attached to the pole with a stainless steel hex bolt, as shown in the Plans.

Controller Cabinet Base:

Anchor bolts for the controller cabinet base shall be 19 mm X 450 mm. Four (4) anchor bolts are required per controller cabinet base. Each anchor bolt shall be supplied with 2 nuts and 2 flat washers. The embedded end of the anchor bolt shall have a 50 mm L bend. The bolt shall conform to ASTM-A36 and shall be galvanized to conform to ASTM-A153.

Installation:

The Contractor shall size foundations to support the total load presented at each location, including the pole, arm (where applicable), and signal heads. The foundations shall include conduit sweeps to accommodate all proposed conduits entering the pole, plus one additional spare conduit. Foundations shall be poured monolithically. Exposed portions shall be formed to present a neat appearance. The bottom of concrete foundations shall rest on firm undisturbed ground.

Forms shall be true to line and grade. Tops of footings for posts and standards, except special foundations, shall be finished at curb-to-sidewalk grade or as directed by the Engineer. Forms shall be rigid and securely braced in place.

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Conduit ends and anchor bolts shall be placed in proper position and to proper heights, and shall be held in place by means of a template until concrete sets.

Both forms and ground which will be in contact with the concrete shall be thoroughly moistened before placing concrete. Forms shall not be removed until the concrete has thoroughly set.

Ordinary surface finish shall be applied to exposed surfaces of concrete. When the edge of a concrete foundation or sidewalk section is within 450 mm of any existing concrete improvement, the sidewalk section shall be extended to meet said improvement.

Where obstructions prevent construction of planned foundations, the Contractor shall construct a foundation satisfactory to the Engineer whose price shall be full compensation for labor, equipment, materials and other necessary appurtenances required for a complete installation.

TRAFFIC SIGNAL POLES:

Traffic signal poles shall be constructed in accordance with the details in the Plans and as described below:

Pedestal Poles:

The pedestal base shall be constructed of cast iron or aluminum and shall be a minimum of 330 mm square at the bottom and a minimum of 380 mm high. The upper end of the base shall be threaded to accept a 115 mm O.D. pipe shaft. The pole shall be hot dip galvanized and powder coated in accordance with Section 1408.

The base shall contain a removable door to allow access to anchor bolts and to permit cable splicing. The door shall be a minimum of 200 mm X 200 mm and shall then be fastened to the base by means of a stainless steel hex head screw into a threaded hole in the base. The shaft shall be 100 mm standard steel pipe (108 mm O.D.) meeting ASTM Designation A53G.

The shaft shall be threaded on one end to screw into the base. The overall length of the pedestal (shaft plus base) shall be 3.1 m.

The pedestal shaft shall be installed plumb in all directions plus or minus 25 mm of the top. Shims will not be permitted on pedestal foundations to achieve plumbness. Pedestal bases shall be grouted with non-shrink grout after the shaft has been plumbed.

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Mast Arm Poles:

Mast arm poles shall consist of a tapered pole, tapered signal mast arm(s), anchor bolts, and base plate.

Pole:

The pole shall be fabricated from coil or plate conforming to ASTM A595 Grade A with a minimum yield strength of 379.5 MPa or ASTM A572 with a minimum yield strength of 45 MPa. The pole shall be round in cross section and have a constant linear taper of 11.64 mm/m. The shaft shall be one piece, and contain no circumferential welded butt splices. Laminated tubes are not permitted. The pole shall have a reinforced 102 mm by 165 mm handhole with cover located 460 mm from the pole base. At mast arm connections, the pole diameter/thickness ratio (D/t) shall not exceed 52 for A595 Grade A tubes or 66 for A572 Grade 65 tubes. Each pole shall be provided with a zinc die cast end cap secured in place with set screws or a cap plate secured with a 19 mm diameter bolt, flat washer and mounting bar. The pole shall be hot dip galvanized and powder coated in accordance with Section 1408.

Mast Arm

The mast arm shall be fabricated from coil or plate conforming to ASTM A595 Grade A with a minimum yield strength of 379.5 MPa. The arm shall be round in cross section and have a constant linear taper of 11.64 mm/m. All mast arms shall be manufactured and shipped in one piece, and have a minimum wall thickness of 4.5 mm. Circumferential welded tube butt splices and laminated tubes shall not be permitted. Each arm shall be provided with a zinc die cast end cap secured in place with set screws. The mast arm shall be hot dip galvanized and powder coated in accordance with Section 1408.

Base Plate:

Base plates shall conform to ASTM A36 or ASTM A572 Grade 42. Plates shall be integrally welded to the tubes with a telescopic welded joint, and shall be hot dip galvanized and powder coated in accordance with Section 1408.

Double Mast Arm Installations:

Where a double/dual mast arm installation is shown in the Plans, the first or higher arm shall be installed on primary parade route main street approaches as directed by the Engineer. For all double/dual mast arm installations, the Contractor shall submit for approval a sketch indicating the attachment height of both arms and the vertical clearance between signal housing and pavement grade for each respective approach.

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TRAFFIC SIGNAL HEADS:

General Requirements:

All traffic sections shall be of the adjustable type. Materials and construction of both types of sections shall be the same. Heads shall conform to the ITE Standard for "Adjustable Face Vehicular Traffic Control Signal Heads", latest edition. The number of sections per face shall be as shown on Plans. All signals shall be mounted vertically, except on mast arms, where they shall be mounted horizontally or vertically, as shown on the Plans.

Housing:

The housings shall be made of cast aluminum. If die cast they shall be made of either Alloy SS or Alloy SG3 of ASTM Specification BS5; if sand cast, they shall be made of Alloy SI of ASTM Specification B26.

All cast metal parts shall have a tensile strength of not less than 117 MPa and shall be clean, smooth and free from flaws, cracks, blowholes and other imperfections.

Housings shall be sectional and each face shall consist of as many sections as there are optical units, together with a suitable top and bottom, all sections being rigidly and securely fastened together into one weather tight signal face.

Each face shall be arranged with round openings (slip-fit for 38 mm conduit) in the top and bottom so that it may be rotated a complete unit between waterproof supporting brackets or trunnions and thus be capable of being directed and locked at any angle in the horizontal plane. Serrations, detents, bolts or similar locking devices are required; friction will not be deemed an acceptable lock. These locks shall be such that any face will resist a torque of 6 N·m when assembled in accordance with manufacturer's recommendations.

The portion of the housing adjacent to the bracket shall be properly reinforced so as to have sufficient strength against breakage from shock. Seals, gaskets, labyrinths or a suitable combination of same shall be provided at bracket attachment points and at section joints to ensure water shedding. Supporting brackets or trunnions shall be used at top and bottom of section assembly to rigidly support all faces.

The bracket at the supported end of the signal section shall be of 38 mm conduit or of an equivalent inside clearance for wiring. The bracket at the opposite end of the section may be either the same as the top or of solid construction. A set screw engaging a drilled hole shall be provided at each joint on the bracket

where conduit type joints are used or an equivalent locking device shall be provided.

All edges shall be deburred and smooth with no cutting edges.

Housing Door:

The doors shall be cast aluminum and shall be suitably hinged and held securely to the body of the housing by simple non-corrosive locking devices which can be operated without tools. All other door parts, such as hinge pins, lens, clips, etc., shall also be stainless steel. Door hinge pins shall be so designed that the door will not accidentally become disconnected from housing when open regardless of signal position. Doors shall be field removable with simple tools.

Weather-resisting, mildew-proof neoprene or silicone rubber sponge gasketing shall be provided between the body of the housing and the doors in order to exclude dust and moisture.

Visors: Each signal section shall have a visor which tilts downward approximately 8 degrees from the horizontal. The visor shall be of sheet construction of aluminum alloy not less than 1.3 mm (No.20 -18 U.S. Gauge) in thickness, or plastic (when specified). All edges shall be deburred and smooth with no cutting edges.

Tunnel visors shall be provided unless otherwise shown on Plans. The visor shall be attached to the door with stainless steel screws and shall be designed to fit tightly to the door and shall not permit any perceptible filtration of light between the door and the visor.

Backplates:

Traffic signal backplates shall be specifically manufactured for the type and brand of signal heads used to ensure proper fit with a border width of 125 mm. The backplates shall be without louvers and shall be of one-piece construction with the exception of those five-section cluster signal heads, which may be a maximum of five pieces.

Optical Units:

The optical units shall be comprised of LED modules as described in the specification under the Section titled "LED Traffic Signals."

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Mounting:

Signal sections and beacon sections shall be suitable for one of the following standard mounts, the type mount for each to be specified in the Plans.

Pedestal Mounting.

The pole shall be furnished with a slip fitter for placement on a 100 mm I.D. pipe pedestal with set screws for correct aligning of the signal. Provisions for base feed shall be incorporated into the design of the section assembly.

The section bracket assembly shall incorporate a weatherproof terminal compartment or box with a removable cover allowing complete access. The box shall be of suitable size to accommodate, and shall come equipped with, a terminal strip with terminals equal to the number of signal indications in the section plus one or more for common. The terminal compartment shall be neat in appearance and shall be adjacent to or near the pedestal mount. In no case shall feed wires be required to pass through a signal section or face to reach the terminal compartment. A terminal compartment integral with the bracket shall be permitted.

Mast Arm Signal Brackets:

Brackets and hardware for mounting traffic signals on mast arms shall be provided by the Contractor. Brackets shall be "Astro-Brac" type or approved equal, and shall accommodate the mounting of horizontal or vertical traffic signals at the locations shown on the Plans. Stainless steel banding shall be used for attachment of the brackets on mast arms. Brackets shall provide a rigid mounting of signal to mast arm to facilitate proper aim of traffic signals. The bracket shall be made of aluminum or other approved rust-proof materials.

Supporting brackets, trunnions and fittings may be made of cast aluminum or cast iron. All parts made of ferrous materials shall be treated to resist corrosion.

Installation:

Signal heads of the various types and mountings shall be installed at locations indicated on the Plans or directed by the Engineer. Ample signal cable slack shall be left in the signal for field adjustment of the signal head.

The Contractor shall complete all wiring of signal heads using spade lugs on each conductor and terminate conductors on the terminal strips provided in

disconnect blocks, terminal compartments or signal heads. All work shall be neat and to the satisfaction of the Engineer.

PEDESTRIAN SIGNAL HEADS:

Pedestrian signal heads shall be made of plastic, nonferrous metal, or a combination thereof. They shall conform to the ITE Standard for Vehicle Traffic Control Signal Heads except the number of sections in an assembly shall be one, and shall provide indications for the universal symbols of "Walk" and "Don't Walk".

LOOP DETECTOR:

General:

Loops shall be of the size and shape indicated in the Plans. Each system loop shall detect only one lane of traffic. The loop shall be centered in the lane and located as shown in the Plans. All detected lanes for the detected direction shall be separately detectorized. The Contractor shall be required to maintain loops which he installs for the duration of the project. Loop construction shall be in conformance with the details in the Plans and these Special Provisions.

Saw Cut:

Loop detectors shall not be installed in pavement that has been open cut, repaired, or rebuilt in a manner where the pavement structure is not sound and continuous in the area of the proposed loop installation. The Contractor shall first field inspect the loop locations and advise the Engineer of any such locations that have been open cut, repaired, or rebuilt. The Engineer will direct the Contractor in locating the loop detectors.

The Contractor shall mark the location of loops and get the approval of the Engineer prior to sawing the slot. A 305 mm separation shall be maintained between all loop wire saw slots wherever possible. Loop wire shall be installed in saw cuts in the roadway made by a diamond or abrasive power saw. The slot width and depth shall be as indicated on the Plans; however, in all cases, the slot shall be of sufficient depth to provide for a minimum of 25 mm cover between the top of the loop wires and the roadway surface.

The saw cuts shall be overlapped so that the slot has full depth at all corners. All corners where loop wires turn shall be diagonally cut so that there are no jagged edges or protrusions which may damage the wire.

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Prior to installation of the wire, the saw cuts shall be cleaned and dried using oil-free compressed air. There shall be no cutting dust, grit, oil, moisture or other contaminants in the saw cut.

Loop Wire:

Loop wire shall be AWG #14 stranded Type XHHW gasoline and oil resistant single conductor insulated for 600 volts. XHHW wire shall meet the requirements of the latest editions of NEMA Standard WC-7, the NEC, and IMSA 51-3. The loop wire shall not have any cuts, nicks, abrasions or breaks in the insulation before or after installation in the slot. Any wire having defects in the insulation shall be replaced at the Contractor's expense.

Loop wire shall be one continuous length of wire with no splices. Loop wire from the curb or edge of pavement to the junction box shall be installed in a 25 mm conduit sweep. The loop wire for each loop shall be run in separate saw cuts from the loop to the junction box.

All loop wire lengths, including lengths in conduit and junction boxes, which are not imbedded in the pavement slot, shall be twisted with at least fifteen (15) turns per meter, and taped at one meter intervals.

The wire shall be placed in the bottom of the slot so that there are no kinks, curls, straining or stretching of the insulation. Subsequent turns of the loop shall be placed to assure vertical stacking of the wires.

Special care shall be taken in seating the wires so that the insulation will not be broken or abraded. No sharp tools such as a screwdriver or metal object shall be used for this operation.

Loop location and configuration shall be as shown on the Plans unless otherwise directed.

Loop Sealant:

All saw cuts with the wire installed shall be inspected and approved by the Engineer before the sealer is installed.

The sealant shall be 3M, Bondo P-606, Preco Loop Sealant or an approved equal. The sealant shall be a one- or two-component sealant designed specifically for sealing detector loops in concrete or asphalt. It shall have satisfactory compressive strength to bridge the saw cut under traffic, but remain flexible to compensate for thermal contraction or expansion.

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The Contractor shall install the sealer in strict adherence to the manufacturer's recommendations and these specifications. Do not apply the sealant when the air temperature is below 7°C, or during precipitation.

The viscosity of the sealer shall be such that it can be readily poured into the slot, completely surround the wires, displace all air and fill the slot so that the sealer is flush with the roadway surface. The finished sealed slot shall be waterproof and present a neat workmanlike appearance.

The sealer shall be sufficiently hardened as per manufacturer's specifications, before allowing traffic on it.

Detector Lead-in Cable:

Each system loop shall have its own, separate lead-in cable. Detector lead-in cable shall be shielded and shall conform to IMSA Specification 50-2, AWG #14.

Lead-in cable shall be installed in a continuous run from the loop wire splice in the curbside junction box to the cabinet mounted terminal strip allocated for detector lead-in cable termination. No splices shall be allowed between these points. The Contractor shall take adequate measures to protect cable from damage during handling and installation.

All splices in junction boxes must be carefully made to insure constant low resistance, and must be insulated by means of a plastic casting splice kit to render a waterproof joint. Connections shall be soldered. The shielded drain wire in the junction box shall be cut off flush and waterproofed so as not to come in contact with the junction box or ground. The shielded drain wire shall be terminated with a ground wire and solidly grounded at the amplifier.

All detector lead-in cable shall be tagged with sleeve labels to identify each cable with its associated loop location and cabinet terminal number. The detector lead-in cable shall be labeled both inside the controller cabinet and inside the junction box. The legend shall be clear and readable and shall not deteriorate with exposure to dirt, water, sun or other conditions found in controller cabinets. The legend shall be firmly and securely fixed to the lead-in cable near the cable termination. The Contractor shall provide the Engineer with an as-built record of each detector lead-in installed and for each vehicle detector amplifier installed. This record shall be in a format approved by the Engineer.

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MICROWAVE DETECTOR ASSEMBLY:

General Requirements:

The Contractor shall install microwave detector assemblies on signal mast arms at locations shown in the Plans, and shall furnish two additional units, and deliver them to the signal shop. The microwave detector assembly shall consist of a microwave detector unit, all necessary mounting hardware, and setup programming required to provide a fully functional system detector station. Microwave detector assembly construction shall be in conformance with the details in the Plans and these Special Provisions.

Functional Requirements:

Detector units shall be true presence detectors which have the capability to measure presence, volume, lane occupancy, and speed for up to six discrete detection zones. The detection zones shall be user definable and programmable with an external notebook PC. Any PC software required for setup and testing shall be supplied on an MS-DOS compatible diskette. Microwave detector units shall have a detection range of 3 to 61 meters.

Detector units shall transmit on a frequency band of 10.525 Ghz +/- 25 MHz with transmitter power not exceeding 10 milliwatts. The detector unit shall comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules for the appropriate Spectrum Management Authority.

Mechanical Requirements:

The detector units shall be enclosed in a rugged weatherproof NEMA 4X enclosure. The dimensions of the unit shall not exceed 205 mm x 255 mm x 155 mm. The total weight of the unit shall not exceed 7 kilograms.

A mounting assembly shall be provided for each detector unit, made of stainless steel or aluminum. The mounting assembly shall be capable of supporting a load of 10 kilograms; and shall be approved by the manufacturer of the microwave detector. The mounting assembly shall incorporate a ball-joint, or other approved mechanism, that allows the detector unit to be tilted in any direction and locked into place.

Electrical Connection and Detector Interface: The Contractor shall furnish and install a single twisted pair control cable meeting the requirements of Section 1406 between the controller cabinet and each microwave detector. The cable shall be UV-resistant and rated for 300 volts. On the back of the detector, the Contractor shall terminate the cable on a single MS connector which provides power, serial communications, and a contact closure output for each detection

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zone. The Contractor shall crimp the MS connector pins to the cable conductors, and perform a continuity test on the cable before installing it. The Contractor shall route the cable from the detector into the mast arm (using a watertight fitting), and shall extend the cable through the pole into the foundation conduits, and then to the controller cabinet. Inside the controller cabinet, the Contractor shall terminate wire pairs used for power and detection on a terminal block, and make the necessary connections to the cabinet's power supply and the detection input to the controller. The pairs used for RS-232 communications shall be spliced to a female 9-pin RS-232 connector, and shall be secured to the side wall of the cabinet such that a laptop computer can be easily connected to it for set-up and programming. Unused wire pairs shall be capped.

Installation:

The Contractor shall position the detector so that the detection zones are centered in the target lane and are the correct distance from the intersection, as shown in the Plans.

When installing the detector units, the Contractor shall perform all the setup activities and tests recommended by the manufacturer, in the presence of the Engineer. The Contractor shall record all setup parameters and place them with the wiring diagram in the controller cabinet.

After the first unit is installed and fully operational, and before the system acceptance tests, the manufacturer of the microwave detectors shall provide at least four hours of hands-on training. The training shall be on-site and shall cover the setup, calibration, operation and maintenance of the detector units, as well as their interface with the controller.

REMOVAL AND SALVAGE:

The Contractor shall remove existing traffic signal equipment as shown in the Plans. Equipment that is removed, including signal heads, poles, mast arms, preemption devices, cabinets, controllers, conflict monitors, and plug-in devices (load switches, relays, etc.) shall be salvaged. Foundations, risers, field wire and cable which are removed and not reused shall become the property of the Contractor and shall be disposed of properly. Materials to be salvaged will remain the property of the City, and shall be transported by the Contractor to the Signal Shop, at 2832 Lafitte Street, New Orleans, Louisiana between the hours of 7:30 am and 3:00 pm, Monday through Friday. All materials to be salvaged shall remain in the custody of the Contractor until such time as they are delivered to the City.

The Contractor shall not damage any salvaged material and shall be required to, if requested, demonstrate to the Engineer that such material is indeed in working

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order. The Contractor shall restore or replace, at his own expense, any salvaged material which is damaged by his operations. All material shall be tagged with a label specifying the location from which the material was removed.

REMOVAL AND REPLACEMENT:

Existing facilities such as sidewalks, curbs, gutters, pavement, etc. that are removed, broken or damaged by the Contractor, shall be replaced or reconstructed in kind. When a part of a square or slab of existing concrete sidewalk or driveway is broken or damaged, the entire square or slab shall be removed and replaced in kind.

TRAFFIC SIGNAL CONTROLLER ASSEMBLIES

GENERAL PROVISIONS

These specifications define the minimum acceptable design and operational standards for traffic control equipment. The equipment shall conform to the NEMA standards specified in the description under each item. If no standards are specified, the equipment shall conform, at a minimum to NEMA TS-1, 1989. In case of discrepancy between these specifications and NEMA standards, these specifications shall govern. The Contractor shall provide at least one traffic signal technician meeting International Municipal Signal Association (IMSA) Level I and Level II Traffic Signal Certification during the installation of the traffic signal controller assemblies.

TRAFFIC SIGNAL CONTROLLER

General:

All controllers provided shall be the same model and made by the same manufacturer. All controllers shall be compatible with the existing central control software in the Traffic Control Center at City Hall. All controllers shall comply with NEMA standards publication NTCIP 1202 v02.10 – NTCIP Object Definitions for Actuated Signal Controllers, formerly named TS3.5-1996.

This specification sets forth the minimum requirements for a 16 sixteen-phase full-actuated traffic signal controller unit with internal Time-Based-Coordination (TBC), railroad/fire/transit emergency vehicle preemption, and closed loop secondary operation.

System Communications

The controllers shall support the NTCIP protocol as well as manufacturer specific protocols. Laptop computers and Palm devices shall be used to

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upload/download the controller database, flash the controller firmware program (stored on EEPROM) and set the System Time Base of the controllers.

Auxiliary RS-232 communication may be provided by the controllers to interface the conflict monitor and temperature alert devices provided in the terminal facility as an option. The auxiliary communication port shall allow data logs from these external devices to be uploaded to the Traffic Control Center through the controllers.

System Time Base:

The System Time Base shall use the sixty (60) Hz power line frequency as time base when AC power is present over the 89-135 VAC range defined by TS-2 §2.1.2. A super capacitor shall maintain the time-of-day clock and digital data during a power outage lasting up to 2 consecutive days. The use of batteries is unacceptable as means of compliance with this section.

The System Time Base shall be maintained to within $\pm 0.005\%$ at 20° C and to within a $\pm 0.02\%$ over the full specified operating temperature range, as compared to Coordinated Universal Time (WWV) standard for a period of thirty days, during periods when AC power is not applied.

The System Time Base shall be easily set to the year, month, day of month, day of week, hour, minute, and second. The controllers shall adjust the system time base for US Daylight Savings Time without operator intervention. A parameter shall be provided to enable or disable Daylight Savings as required by NTCIP.

The controllers shall perform an automatic calendar adjustment for leap year.

Coordination:

NTCIP based coordination shall be based on a pattern having a fixed cycle length and a designated coord phase used to reference the pattern offset to a system time reference. It shall provide a minimum of 48 patterns each defined in the pattern table by an individual cycle length and offset (in seconds), a split table index and a phase sequence index.

NTCIP based coordination shall provide a minimum of 24 individual split tables referenced by index 1-24 in the pattern table. Each split table shall designate split times (in seconds) for each of the 16 phases and allow any phase to be programmed as a coordinated phase. A phase omit or recall (min, max, ped or ped+max) may be applied to any phase in the split table overriding the normal recall mode of the phase when the pattern is in effect.

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Coordination Diagnostics shall be provided to insure that the sum of the split times in each active ring equals the programmed cycle length. In addition, the coordination diagnostic shall insure that the split times provided are adequate to service the minimum vehicle and pedestrian times programmed for each phase. The coordination diagnostic shall also insure that the sum of the split times on the same side of the barrier in each ring are equal.

Each Actuated Signal Controller (ASC) shall provide a manual pattern override mode via keyboard entry to override the active pattern and any future pattern called by the Time Base Scheduler or closed loop system.

Preemption:

The internal preemptor supplied shall be user programmable for priority preemption in the minimum sequences outlined in the following order: railroad (2 train sequence), emergency vehicle (4 high priority sequences), and bus/transit (4 low priority sequences). Each preemption sequence shall have separate timing intervals. A decoded input to the controller shall be provided to discriminate the priority level. A steady state low level input is defined as a high priority signal, and a pulsing low level input is defined as a low priority signal.

Phases shall be selectable such that a limited signal sequence may be operational during preempt (PE). It shall be possible to add phases to this special limited sequence, which are not in the intersection sequence, without needing to add external logic.

Preempt sequences shall be selectable using external inputs. Preempt priority shall be assigned with #1 being the highest. If a higher priority preempt input is received during a preempt sequence, the controller unit shall immediately transition to the new sequence, subject to the constraints of PE Minimum Green and PE Minimum Walk. Provisions shall be made to clear two conflicting track phases from a single preempt input. This may be provided by two track clearance phases for a single preempt, or by combining two preempts.

Preempt 1 shall be reserved for a priority railroad preempt. If more than two preempts are provided, it shall be possible to delete the priority override for all but the railroad preempt. If a lower priority preempt is activated during another preempt cycle, the one in progress shall continue through its entire cycle. If the second preempt input is still active when the first one is completed, the controller unit shall then initiate the low priority preempt.

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CONFLICT MONITOR:

General:

All conflict monitors provided shall be the same model and made by the same manufacturer. The conflict monitors shall be compatible with all controllers supplied as part of this project.

The conflict monitor shall meet the standards of NEMA Standard Publications TS1-1989, Section 6 for 12 channel types. The monitor shall also meet all environmental and transient specifications of NEMA TS1-1989, Section 2. A Type 12 conflict monitor having 12 fully programmable input channels shall be provided.

The conflict monitor will include the communications protocol to send messages through the controller supplied as part of this project via an RS232 port located on the front panel of the unit to the Traffic Control Center in City Hall. These reports shall be accessible through a report generation screen and also be capable of being printed from the system for maintenance information.

Each monitor shall have a back lighted LCD display provided to indicate continuously when a channel is active due to green, yellow, red or walk inputs. It shall also continue to display the channels, which were active at the time of a conflict, until the conflict monitor is manually reset. If the conflict was caused by a loss of red, the display array shall indicate loss of red. If the conflict was caused by the voltage monitor, the display array shall indicate a voltage error.

The monitor shall conflict on multiple indications within each phase (green-yellow, green-red, red-yellow). The display shall show which indication caused the conflict.

The monitor shall store a minimum of twenty (20) failures and thirty (30) power condition changes stamped by day, date, and time.

Communications:

The conflict monitor shall generate a report that can be accessed from a central software package for each of the following items:

The configuration of the programming card.

The channels, which have the NEMA plus features, enabled.

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A listing of the phases which are monitored for short yellow times.

Additionally, the conflict monitor shall store and report at least the last (20) twenty failures containing the information listed above when interrogated directly via the portable download/upload unit.

LOAD SWITCHES

The controller assembly shall be provided with the number of signal load switches as required to provide the phases required by the Plans and these Special Provisions. Load switches shall be jack-mounted solid state NEMA triple signal load switches.

FLASHERS

The controller assembly shall be provided with a solid state NEMA two circuit flasher with the major street indications being connected to one circuit and the minor street indications being connected to the other circuit.

CONTROLLER CABINET:

General:

The controller and all associated equipment shall be provided in a weatherproof metal cabinet of clean-cut design and appearance. All exposed edges shall be free of burs and pit marks. Controller cabinets shall be identical and be provided by the same manufacturer as the controller. All cabinets shall be base mounted on new foundations.

Construction Materials:

The cabinet shall be constructed of ASTM Designation B-209 sheet aluminum alloy 5052, with a minimum thickness of three mm. The cabinet shall have a smooth natural aluminum finish. Handles and locks shall be rustproof.

Welds:

All welds shall be neatly formed and free of cracks, blow holes, and other irregularities. All welds shall be made by the Heliarc welding method. Welds on the exterior faces of the cabinet shall be reduced to a minimum.

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Door:

A hinged door shall be provided permitting complete access to the interior of the cabinet. The door shall be equipped with a closed cell neoprene gasket at least 6.35 mm thick permanently bonded to the metal. Coat the mating surface of the gasket with a silicone lubricant to prevent it from sticking to the mating metal surface. The door shall be provided with a brass or stainless steel lock utilizing a Corbin No. 2 key that is removable in the locked position only. The Contractor need not provide any new keys with the cabinets. The locking mechanism shall secure the door to the cabinet at three (3) points.

Auxiliary Door:

A small hinged and gasketed "door in door" shall be included on the outside of the main cabinet door. The auxiliary door shall not allow access to the controller, its associated equipment, or exposed electrical terminals but shall allow access to a small panel and compartment containing switches and/or jacks as follows:

A signal shut-down switch

A flash control switch

An auto-manual switch and jack-mounted push-button for manual operation

The auxiliary door shall be equipped with a strong lock utilizing keys of a skeleton key design.

Door Stop:

The main cabinet door shall be equipped with a stop and catch arrangement to hold the door open at angles of 90 degrees, 135 degrees and 180 degrees, +/- 10 degrees. The door stop shall be constructed of metal and shall withstand the force of a 50 km/h wind force.

Mounting Shelves:

The cabinet shall contain strong mounting shelf or shelves to accommodate controller unit and all required auxiliary devices. The cabinet facility shall permit the controller and/or auxiliary devices to be withdrawn from the cabinet for inspection or maintenance without breaking any electrical connection or interrupting operation of the controller.

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Mounting Hardware:

Screws and/or bolts used for mounting shelves or other auxiliary devices shall not protrude beyond the outside wall of the cabinet.

Manufacturer's Identification:

The manufacturers' name shall not appear on the outside of the cabinet, but shall appear on the inside of the cabinet door, with the year and month of manufacture. This may be done by a plate welded to the door, by a moisture resistant label or other approved methods.

Size:

All cabinets shall be the same size. Cabinets shall have a minimum internal dimension of 1350 mm high, 960 mm wide and 660 mm deep. In all cases, the cabinet shall be of adequate size to properly house all required equipment such as controller, conflict monitor, detectors, etc. intended to be contained therein; all in an upright position with a clearance of at least 75 mm from the vent, fan and filter to allow for proper air flow. In no case shall more than 70 percent of the cabinet space be used. There shall be at least 50 mm of clearance on each side of the shelf between the equipment and side walls of the cabinet.

Mounting:

The cabinet shall be fabricated for mounting on a concrete foundation. An anchor bolt template, galvanized anchor bolts, nuts and hardware required for base mounting shall be furnished with each cabinet.

Ventilation:

The cabinet shall contain suitable designed rain-tight vents in the door of the cabinet. The vents shall allow the release of excessive heat and any gases which may enter the cabinet.

A removable dust filter shall be mounted on the inside of the main door completely covering the intake vent. The cabinet air filter shall be a disposable, standard size household air conditioning filter and its minimum area shall be 0.20 square meters. Positive retainment shall be provided on all sides to prevent warpage of the filter and to prevent the entry of foreign matter around the edges.

All cabinets shall have a thermostat controlled vent fan. The thermostat controlling the fan shall be manually adjustable to turn on between 40 degrees and 70 degrees Celsius with a differential of not more than 10 degrees between automatic turn-on and turn-off.

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The fan shall have a minimum capacity of at least three cubic meters per minute and be located with respect to the vent holes so as to direct the bulk of the air flow over the controller and auxiliary devices.

Electrical Requirements:

The cabinet shall have connecting cables for all electrical connections from the controller, conflict monitor and other auxiliary devices to outgoing and incoming circuits and shall be made in a manner such that each unit or device can be replaced with a similar unit or device without the necessity of disconnecting and reconnecting individual wires leading therefrom.

Connecting cables shall be installed in the cabinet in the amount necessary to provide electrical connection to all controller and/or auxiliary device input and output functions for the required specific intersection signal sequence and controller operation.

Each connecting cable shall contain individual wires with a minimum size of No. 22 AWG leading from pins in its connector to terminals mounted in the cabinet to provide electrical continuity for every designated input, output and spare function pin in its associated controller or auxiliary device connector.

The connector on each connecting cable shall be keyed, sized or otherwise constructed where it may be connected only to the proper controller or auxiliary device connector and shall be clearly marked to indicate its function.

Each connecting cable shall be installed in the cabinet in a neat workmanlike manner. Individual connecting cables and internal cabinet wiring with a minimum size of No. 22 AWG shall be bundled together neatly and attached firmly in place.

Terminals:

As a minimum, wiring terminals arranged within the cabinet so that they will facilitate the connection of incoming and outgoing conductors shall be provided with adequate electrical clearance between terminals, and clearly marked for the following:

Magnetic circuit breakers and integral power line switches for incoming power lines.

The unfused neutral side of the incoming power line.

AC power connection for signal displays and be able to accommodate up to 8 No. 12 AWG wire size.

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Termination of connecting cables internal wiring for all controller and auxiliary devices inputs and outputs.

Terminal blocks shall be the barrier type with a sealed back. They shall be rated for 20 amps and 600 VAC. The terminal screws shall be nickel-plated brass eight mm long with screw inserts of the same material. Clearly and permanently label each terminal on a contiguous surface using silk screening or other approved method.

Arrange the equipment and terminal blocks within the cabinet so that they do not interfere with the entrance, tracing, and connection of conductors or communications cable. All conductors entering the cabinet shall terminate on terminal blocks. Neatly arrange all conductors and communications cables in the cabinet and bundle them in groups with cable ties.

Signal Circuit Polarity:

Outgoing signal circuits shall be of the same polarity as the line side of the power service, and the common return shall be of the same polarity as the grounded side of the power service.

Grounding Bus:

A grounding bus or buses shall be provided and shall be bonded to the cabinet in an approved manner. Multiple buses shall be interconnected by a minimum size No. 10 AWG solid copper wire.

Surge Protection:

As described in the specifications under "Surge Protection."

Convenience Outlet:

A duplex outlet with ground safety interference shall be provided. Internal cabinet wiring shall permit power to be disconnected from the controller and auxiliary devices while maintaining power to the convenience outlet.

Cabinet Light:

A light shall be mounted in the top of the cabinet which will illuminate controller, auxiliary devices and wiring panels. The light shall be a minimum 20 watt fluorescent fixture. A door switch shall be provided which turns off the light when the main cabinet door is closed. The door switch shall be monitored by the controller, so that an operator at the TCC can determine the position of the door.

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Internal cabinet wiring shall permit power to be disconnected from the controller and auxiliary devices while maintaining power to the cabinet light.

Service Switches:

Service switches shall be located on the inside of the main cabinet door and labeled as follows:

Signal Power:

When in the OFF position all power to all signal heads shall be removed.

Flash:

When in the ON position the intersection shall be in flashing operation with AC power being removed from the load switches only.

Cabinet Power:

When in the OFF position all AC power shall be removed from all cabinet circuits except the convenience outlet and cabinet light.

Controller Power:

When in the OFF position AC power shall be removed from the controller only.

Stop Time:

When in the ON position the controller shall stop and the intersections shall be in flashing operation.

Detector:

A three position switch shall be provided for each phase with the center position being the OFF position, the "UP" position being a positive contact for input of a constant call and the "DOWN" position being a spring loaded contact for input of a momentary call.

LOOP DETECTOR AMPLIFIERS:

At loop detector locations, controller cabinets shall be furnished with the appropriate number of loop detector amplifiers to operate the detectors. Existing amplifiers shall be retained for local detectors.

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Detector amplifiers shall be single or dual channel shelf mounted amplifiers. They shall be of digital, solid state construction with printed circuit boards laminated from high quality glass-epoxy materials. Connections shall be made through a 10 pin MS type connector for the single channel and two 10 pin MS type connectors for two channel units.

The amplifier shall be capable of operating with inductance ranges from 30 to 1000 microhenries with maximum sensitivity capable of detecting 0.02 percent inductance changes.

The unit shall tune automatically upon the application of power. It shall achieve normal operation and at least 90% of its selected sensitivity within 30 seconds after application of power.

Each channel shall be capable of functioning in the following two front panel selectable modes:

Presence:

When in this mode, the detector channel shall be capable of detecting the presence of a large motorcycle located in a conventional 1.8 m x 1.8 m 3-turn loop, and holding the call at least four minutes.

Pulse:

When in this mode, the amplifier channel shall be capable of having a detection output of between 75 milliseconds and 150 milliseconds. If a vehicle remains in the detection zone, the detector shall become responsive to additional vehicles entering the detection zone within a maximum of 30 seconds.

Each channel of the detector shall include means to select at least three levels of sensitivity up to a maximum sensitivity of at least 0.02 percent change in inductance.

The unit shall be capable of preventing crosstalk between channels of the same unit and between separate units by means of a front panel frequency switch.

Relays shall be equipped with normally open and normally closed contacts. The relay shall furnish a continuous call in case of power failure, detector failure or an open loop.

A light-emitting diode (LED) or long-life incandescent indicator shall be provided for each channel to give a visual indication of each vehicle detection.

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Each channel of the amplifier shall automatically adjust for changes in undamaged loops properly installed due to environmental changes without producing an output or change in sensitivity.

Each channel shall provide unlimited detection of continuous traffic without loss of detection in long peak-hour traffic queues. Vehicle movement over the loop shall restart presence hold time.

The amplifier electronics shall be adequately protected from transient voltages and currents which may occur on both power lines and loop leads.

The amplifier shall contain the necessary electronics to provide both delayed call and extended call operation. Timing shall be digital and selection of delayed, extension or normal detector operation shall be accomplished via front panel control.

Delay timing shall inhibit detector output until presence has been maintained for the time selected. Each new detection shall restart the delay timer, timing adjustments shall be from 0 seconds to 30 seconds in one second increments. The detector shall be capable of disabling delay timing by external means. External input for disabling delay timing may be either ground active DC or line voltage AC active.

Extended timing shall hold detector output for the period of time selected after the vehicle leaves the loop. Timing adjustments shall be from 0 seconds to 7.75 seconds in 0.25 second increments. The detector shall be capable of disabling extended timing by external means. External input for disabling extended timing may be either ground active DC or line voltage AC active.

Detector units shall be furnished with a 1.5 m harness with a MS3106A-18-15 connector. Pin assignments shall be according to NEMA TS-1. One harness shall be supplied with each single channel unit and two harnesses shall be supplied with two channel units. Each harness shall be supplied with a write-on tag (minimum 51mm x 25 mm) in order to label each channel.

Amplifiers shall be installed in the controller cabinet. Input and output cables shall be connected as indicated in the Plans or as required by the manufacturer. The Contractor shall demonstrate, to the Engineer's satisfaction, the operation of the detector amplifier in all modes.

SIGNAL SERVICE:

The installation of electrical service to traffic signal controllers shall meet the requirements of Section 736.05 of the Standard Specifications, with the following

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additions: The Contractor shall be responsible for the installation of new electrical power service facilities at locations shown in the Plans. At locations where no new power service is shown, the Contractor shall be responsible for extending the existing power service to the new service location. If the existing power cable does not reach the new cabinet location, the Contractor shall install new power cable from the power service point to the cabinet's power service panel. The new power service cable shall meet the requirements as described in the specifications under the Section titled "Cable." The Contractor shall coordinate all power service work with *Entergy*. Meter pans for electrical services shall be 2.1 meters from center of meter pan to the ground. New power service installations shall include all materials, labor and equipment including including conduit, risers, cable, meter pan, circuit breakers and incidental hardware required to complete the installation and provide power to the cabinet. No separate payment will be made for the extension of existing power service to the new cabinet location.

INSTALLATION:

The Contractor shall install existing signal timing in the controllers. The City will provide existing timing on a 90 mm (3.5") MS-DOS compatible diskette in the form of a spreadsheet. Before installation in the field, controllers shall be shop tested as follows: The entire traffic signal controller assembly, including the cabinet, shall be set up in the Signal Shop, at 2832 Lafitte Street. A simulated load shall be applied to the field circuits and the controllers will be run for a minimum of 72 hours. The Engineer shall be afforded the opportunity to witness the test. Once the controller assembly has passed the shop test, it may be placed in the field.

The Contractor will be required to have suitable technical personnel to assure that detectors, interconnect and field wiring are properly connected according to manufacturer's recommendations. The intersection shall not be put into operation without the approval of the City.

At locations shown in the Plans, the Contractor shall remove existing controllers, cabinets, and foundations and install new controllers, cabinets, and foundations. The Contractor shall prepare a change out plan for each location, for approval by the Engineer, which shall describe in detail the procedures the Contractor will use to install the new cabinet assembly, including the temporary control of the signals or other method of controlling the intersection. The plan shall also include the orientation of the cabinet on the foundation and shall provide clearance swing lines for the cabinet doors.

Two methods of cabinet change over shall be used, as indicated in the Plans. The first method involves the installation of the new cabinet in the existing cabinet location, and the second involves the installation of the new cabinet

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adjacent to the existing cabinet location. While the intersection is out of service, the Contractor shall install the new intersection wiring, and connect to the terminals in the new cabinet. Existing intersection wiring shall not be connected to the new controller, and new intersection wiring shall not be connected to the existing controller.

New Cabinet in Existing Location (Type A):

For this change over method, the Contractor shall remove the intersection from operation, and excavate around the existing foundation to expose all existing conduits entering the cabinet. The Contractor shall carefully cut the existing conduits, remove cables from their terminals, and then remove the existing cabinet and foundation. The Contractor shall then extend the existing conduits and install new conduit sweeps as required, and pour the new foundation around the conduits. Conduit sweeps will be considered incidental to the cabinet assembly and will not be paid separately.

New Cabinet Adjacent to Existing Location (Type B):

For this change over method, the Contractor shall mark the location of the new cabinet foundation in the field, and have it approved by the Engineer before beginning the change over procedure. The Contractor shall install the new foundation, cabinet, and controller. The Contractor shall then remove the intersection from operation, and excavate around the existing foundation to expose all existing conduits entering the cabinet. The Contractor shall carefully cut the existing conduits, remove cables from their terminals, and then remove the existing cabinet and foundation. The Contractor shall install a traffic manhole in the pit of the removed foundation, and shall extend the existing conduits into the manhole. The Contractor shall then install conduits as required between the manhole and the new cabinet.

CABLE

Traffic Signal Cable:

Contractor supplied traffic signal cable shall be 7 conductor #14 AWG stranded cable for traffic signals, and 5 conductor #14 AWG stranded cable for pedestrian signals. Cable shall meet IMSA 20-1 specifications with the following exceptions:

Each conductor shall consist of 7 tinned copper strands.

No fillers shall be allowed.

Tracer ink on cables shall be indelible so it will not flake or rub off under normal use.

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Electrical Service Cable:

Electrical Service Cable shall be 2 conductor AWG #6 solid, meeting the NEC requirements for XHHW cable.

Wiring Methods:

Furnish and install all necessary spade lugs, crimped solderless connectors, recessed-screw barrier-type terminal blocks, tape, Engineer-approved waterproofing material, wire wrap, UV resistant nylon wire ties (if used external to cabinet), grounding wire, ground rods and all other material necessary to install and connect the wire and cable to form a fully functioning system.

Where wire or cable is installed in conduit, use only a cable pulling lubricant approved by the Engineer. Seal all wire and cable ends with an approved material and technique to exclude moisture until properly spliced or terminated.

Dress all field wiring entering a cabinet against the walls of the cabinet. Harness, clamp, or lace field wiring as required. The Engineer may require additional clamping, lacing, or harnessing if, in his judgement, this is required for an acceptable installation. Terminate all electrical wire on recessed-screw, barrier type termination blocks.

Do not make any electrical splices at any point in the work required by this Contract except at recessed-screw, barrier type terminal strips in the equipment cabinets. Do not install terminal strips on the floor or bottom of equipment cabinets.

Protect all new conductors and cables from damage and from moisture and water absorption.

CABLE INSTALLATION:

General:

Use appropriate installation techniques such that the mechanical characteristics of the cable are not degraded. Unless otherwise approved by the Engineer, use only the equipment and procedures specified by the manufacturer of the cable. Install the cable in such a way that neither the minimum bending radius nor the maximum pulling tension are violated before, during, or after installation.

Take every precaution to ensure that the cable is not damaged during storage and installation. Do not allow workers to step on the cable or run it over with any vehicle or equipment. Replace and reinstall any cables that are damaged at no additional cost to the project.

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Cable runs shall be continuous between allowable termination points in controller cabinets or splice cabinets. Carefully determine the length of cable necessary to reach from termination point to termination point. Do not splice cable in conduit, junction boxes or manholes. An exception to this requirement is detector lead-in cable, which shall be spliced to loop wire in the junction box adjacent to the saw cut.

All conductor cable slack shall be stored in manholes, not in the equipment cabinets.

No separate payment will be made for equipment used to install, terminate and test the cable, the cost of which shall be included in the unit price to furnish and install the cable. The unit price for cable shall also include all cable ties, clamps, and other hardware required to install the cable.

Underground Installation:

Before any underground cable installation is performed, provide the Engineer with four (4) copies of the cable manufacturer's recommended and maximum pulling tensions for each cable size and type. These pulling tensions shall be specified for pulling from the cable's outer jacket. Also provide a list of the minimum allowable cable bending radius and the cable manufacturer's approved pulling lubricants and guidelines for their application. Only these lubricants will be permitted.

The installation system to be used must be inspected and approved by the Engineer. Do not pull the cable along the ground, over edges or corners, over or around obstructions, or through unnecessary curves or bends. Use approved cable guides, feeders, shoes and bushings to prevent damage to the cable during installation.

Establish adequate voice communications between the cable feeding location and the cable pulling equipment prior to commencing any pulling operations. Set up the cable reels on the same side of the junction box or manhole as the conduit section in which the cable is to be placed. Make the reel level and bring it into proper alignment with the conduit section such that the cable will pass from the top of the reel in a long smooth bend into the duct without twisting. Do not pull the cable from the bottom of the reel. Feed the cable by manually rotating the wheel.

Pull the cable in the conduit with a cable grip designed to provide a firm hold on the exterior covering of the cable. Use an approved cable feeder guide between the cable reel or storage stack and the face of the duct to protect the cable, and to guide the cable into the duct as it is played off the reel or from the storage

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stack. The dimensions and set-up of the feeder guide shall be such that the cable does not bend at any location to a radius less than the cable's minimum allowable bending radius. Do not exceed this minimum bending radius at any time during cable installation.

Keep cable ends sealed at all times during installation, using an approved cable end cap. Do not use tape to seal the cable end. Keep the cable end sealed until termination takes place. Provide a minimum of 12 meters of slack for cables that are not immediately terminated.

The allowable pulling tension shall be 70 percent of the manufacturer's maximum pulling tension for pulling by the outer jacket. Ensure that the allowable pulling tension is not exceeded at any time during cable installation by using one of the following methods, as approved by the Engineer:

Pulling the cable by hand.

Approved mechanical means. If the cable is pulled by mechanical means, use a clutch device to ensure the allowable pulling tension is not exceeded. Also, attach a strain gauge to the pulling line at the cable exit location, and at a sufficient distance from the take-up device, such that the strain gauge can be read throughout the entire cable pulling operation.

Use an approved lubricant, in the amount recommended by the cable manufacturer, to facilitate pulling the cable. Lubricate the cable as it is payed off the cable reel or storage stack into the cable feeder. Place an approved cable lubricator (funnel) around the cable just ahead of the cable feeder to facilitate proper lubrication of the cable. After the cable has been installed, wipe the exposed cable in a junction box, manhole, or cabinet clean of cable lubricant with a cloth before leaving the junction box, manhole, or cabinet.

The Contractor may, at his own option and with the Engineer's approval, furnish, install, and pull cable through an intermediate junction box or manhole. Intermediate junction boxes or manholes will be considered part of cable installation, and no separate payment will be made for this work.

Pull the necessary length of cable to be installed from one junction box, manhole or cabinet, to the immediate next downstream junction box, manhole or cabinet. Carefully store the remaining length of cable to be installed in the next conduit in a manner that is not hazardous to pedestrian or vehicular traffic yet ensures that no damage to the cable occurs. Store the cable in a manner that allows that length of cable to be safely pulled into the next conduit. Use a storing method that is approved by the Engineer.

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CONDUIT

General:

All underground conduit shall be polyvinyl chloride (PVC) conduit, except where otherwise directed by the Engineer. Short extensions to existing metallic conduit may be required as directed by the Engineer, in which case metal conduit shall be used.

The ends of all conduits, whether shop or field cut, shall be reamed to remove all burrs and rough edges. Cuts shall be made square and true so that the conduits butt or come together for their full circumference.

PVC Conduit:

The Contractor shall install PVC conduit of the type, size and at locations shown on the Plans. PVC conduit shall be Schedule 40, and shall meet the latest requirements of NEMA TC-2. Conduit shall come equipped with termination fittings at all ends, and shall be installed so that cable may be readily pulled into it without damage.

Multiduct Conduit:

At locations shown on the Plans, the Contractor shall furnish and install a nominal 100 mm multiduct conduit with an integral 150 mm extended gasketed bell and a spigot coupling. The conduit shall be Schedule 40 PVC conduit suitable for direct burial, and conforming to the requirements of NEMA TC-2. Provide external spacers for the support of the conduit in the trench, and for the separation from additional conduits in the trench. All spacers shall be molded from a high impact PVC plastic, and shall match the impact resistance of the multiduct conduit itself. External spacers will be considered incidental to conduit installation, and will not be measured for separate payment.

Do not use cement to assemble individual conduit or bend sections. Mark the spigot end with a circumferential ring to ensure proper insertion depth during coupling. Identically mark each conduit segment with a longitudinal running print line to assure proper innerduct orientation and alignment. Use fixed or flexible bends of the same material as recommended by the manufacturer to avoid obstructions, and to make the bends shown in the Plans. The conduit shall contain four preassembled nominal 32 mm prelubricated PVC innerducts. The innerducts shall be installed and lubricated at the factory. Provide a non-cemented spacer system to hold the innerducts in a square configuration.

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Rigid Metal Conduit:

Metal conduit and fittings, where required, shall be standard weight, rigid galvanized steel (intermediate weight not acceptable) and shall comply with the Underwriters Laboratories Standard UL 6, Federal Specification WW-C-581-C and ANSI C 80-1. Rigid metal conduit will only be used for short (< 2m) extensions of existing conduit, and for loop wires. No separate payment will be made for rigid metal conduit.

Manholes:

Manholes shall be installed at locations shown on the Plans or as directed by the Engineer. The Contractor may install additional manholes with the approval of the Engineer at no additional compensation.

The bottom of the manhole shall rest firmly on aggregate bedding with a minimum depth of 30 mm at the bottom and extending 150 mm from the outside edge of manhole, unless otherwise specified by the Engineer. Bedding shall conform to Section 726 of the Standard Specifications.

Below ground, backfill shall be compacted to the approximate density of the surrounding soil. Above ground, the material shall be compacted to 95 percent of maximum density. Maximum density shall be determined in accordance with DOTD Designation TR 418 and the in-place density determined by DOTD TR 401.

Manholes shall be reinforced concrete and shall be constructed in accordance with ASTM Designation C 76.

A cast iron frame and cover of dimensions shown in the Plans shall be installed in each manhole. Castings shall be Class 30 and shall conform to Section 1013.06 of the Standard Specifications. Covers shall have a bossed or ribbed top surface of 6 mm in relief. Notches shall be provided for removing the cover. The word "TRAFFIC" shall be three mm in relief as indicated on the Plans. Covers shall be level with the pavement or with the curb or sidewalk grade, or with surrounding ground, as required.

Frames shall have a minimum weight of 80 kilograms. Covers shall be of the "Extra Heavy" type with a minimum weight of 65 kilograms.

Junction Boxes:

The Contractor shall install junction boxes at locations shown in the Plans. Junction boxes shall be in conformity with the details shown in the Plans.

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Conduit Installation:

In accordance with Section 736.17 of the Standard Specifications and with the following additions and exceptions:

General:

Where two or more conduits are to be installed in the same trench, impact-resistant plastic spacers shall be utilized. The spacers shall be installed a maximum of 2.4 meters on centers, and shall provide a separation between conduits equal to at least 65 percent of the diameter of the conduit.

Immediately prior to the installation of cables, all conduit runs longer than 10 meters, including existing conduits which are to be utilized, shall be carefully rodded, swabbed, or otherwise cleaned to insure that the interior is free and clear of all obstructions. After the conduit has been cleaned, each conduit shall be gauged by pulling through a metal ball of a diameter not less than 85 percent of the nominal inside diameter of the conduit, to ascertain that the conduit is free of any obstruction or foreign material. If the ball fails to pass through the conduit, the defective conduit shall be repaired or replaced without additional compensation (Contractor-installed conduit), or at bid unit prices (existing conduit).

Conduit bends and elbows made in the field shall have a radius of not less than nine times the inside diameter of the conduit and all such bends shall be made without crimping, denting or otherwise damaging the conduit. No field bends will be allowed for multiduct conduit. Field bends shall be made with an industry-accepted flameless heater designed to distribute heat evenly over the section of conduit being bent. Internal supports shall be provided to prevent deforming of the conduit during the bending. Manufactured bends and elbows of identical material to the conduit may also be used. Any bends in conduit other than the 90 degree bend into a foundation or as shown on the Plans shall require the prior approval of the Engineer.

Trenching and Backfilling:

Excavations for the installation of conduit shall be performed in such a manner as to cause the least damage to streets, sidewalks and other facilities. Excavation shall not be performed until immediately before installation of conduit. Material from the excavation shall be so placed as to cause the least disruption and obstruction to traffic and the least interference with surface drainage.

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Conduit Installed Under Roadway:

Where conduit is to be installed under existing roadways or sidewalks, it shall be jacked or bored unless impossible to do so because of obstructions. In the event that obstructions are encountered during the course of jacking or boring, permission shall be obtained to make earth excavations for test pits to clear the obstruction. A minimum of two attempts shall be made to install conduit by the jacking or boring method and if unsuccessful, a final attempt shall be made changing the procedure and location (both horizontal and vertical), and if the final attempt fails, then permission may be given for the open cut method. Open cut installation in roadways shall only be performed with prior written approval from the Engineer.

When roadways are cut to install underground conduit, the cuts shall be restored to within 150 mm of the surface using high early strength concrete. Backfill in the remaining trench shall conform to the materials composition of the existing pavement. The outline of areas to be excavated shall be saw cut to a minimum depth of 51 mm prior to excavation. Cuts shall be neat and true with no shatter outside the removal area. The Contractor shall schedule the work so that each cut shall be restored properly, and that portion of the roadway shall be usable the following day. The width of cut shall not exceed 200 mm.

Conduit Installed In Existing Facilities:

At locations shown on the Plans, the Contractor is required to install new conduits in existing junction boxes, manholes, or pole foundations. At these locations, the Contractor shall modify the existing junction box, manhole, or pole foundation to allow the new conduit sweep(s) to enter the foundations as follows:

Remove concrete by cutting, chiseling or any other method approved by the Engineer as required to install new conduit sweeps without damage to existing conduit(s). The Contractor shall repair any damage incurred at no cost to the project.

After removing concrete, the area shall be washed with pressurized water at a minimum of 3,400 kPa and then thoroughly dried with compressed air.

Position new conduit sweeps, and apply an approved concrete bonding compound on the exposed concrete surfaces as recommended by the manufacturer.

Forms shall be positioned so that the profile of the existing foundation above grade will be matched.

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Foundations shall be restored to their original dimensions, by the use of a high strength grout.

If there are sufficient existing empty conduit sweeps available, it will not be necessary to modify the foundation. It shall be the Contractor's responsibility to obtain the Engineer's approval to use the existing sweeps.

Conduit Connections:

Rigid metallic conduit connections shall be accomplished using a threaded coupling of the proper size. Threads shall be clean cut, straight and true, and of sufficient length to permit proper coupling. A waterproofing compound shall be applied to each joint. Long running threads will not be permitted on any part of the work. Threads shall be protected in transit and during installation, and conduit shall be provided with proper supports and protection during construction to prevent damage. All ends of pipe installed for future connections shall be properly threaded, reamed and capped.

Where PVC conduit is to be connected to rigid metallic conduit or other existing conduit, a suitable manufactured adapter shall be used.

Conduit Termination:

Conduit terminating in controller cabinet foundations, pedestal bases, mast arm bases, manholes, and/or junction boxes shall be sealed with duct seal. Immediately after conduit installation, conduit outlets shall be temporarily capped to prevent water, earth and other foreign matter from entering the duct before being used.

Conduits terminating in controller cabinet foundations shall extend a minimum of 75 mm above the foundation. Conduits entering junction boxes from the bottom shall terminate not less than 75 mm, nor more than 100 mm, above the bottom of the box and near the box walls to leave the major portion of the box clear.

For conduit runs that terminate in pole bases, there shall be a separate outlet for each run of conduit entering the pole base. Conduit shall enter pole bases from the bottom or side and shall terminate in the center of the top of the foundation. Conduits terminating in pole bases shall extend approximately 38 mm above the foundation and shall be sloped toward the handhole opening. Conduits shall enter concrete manholes from the side and shall terminate flush with inside wall to leave the major portion of the manhole clear. Bell ends shall be used at conduit entrances to manholes and junction boxes.

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PAINTING AND SURFACE FINISHING

GENERAL:

The Contractor shall be responsible for preparing and finishing all signal hardware surfaces installed under this Contract. The Contractor shall furnish the Engineer with a list of items to be painted, and no painting shall begin until this list is approved. All painting operations shall be conducted in accordance with the requirements of Section 811 of the Standard Specifications. Painting will be considered incidental and no separate payment will be made.

The Contractor shall be responsible for preparing and finishing all metal parts, fittings, pedestals, and mast arms associated with standard signal installations. The surface finish for these installations includes a combination coating of hot dip galvanizing and powder top coat. The Contractor shall furnish the Engineer with a list of items to be hot dip galvanized and powder coated, and no ordering of equipment shall begin until this list is approved. All combination coating operations shall be conducted in accordance with this Special Provision and will be considered incidental and no separate payment will be made.

Type of Paint:

These specifications are not intended to prohibit the use of paints of similar character but different composition. Substitute products must be equal to specified paints for all qualitative requirements applicable to their use. Substitute products must be approved by the Engineer. The approval of a product shall not relieve the Contractor of his obligations outlined in these specifications. Type of paint to be used shall be as follows:

Primers:

Chromate aluminum oxide coating process: Shall meet Government Specifications MIL-C-5541

Epan Oxide Baking Primer: Shall meet Federal Specifications (FS) TT-P-636.

Zinc Chromate Primer: Shall meet FS P-735.

Red Lead: Shall meet FS TT-P-86.

Iron Oxide: Shall meet FS TT-P-36.

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Enamels:

Gloss (Green): Shall be a high gloss alkyd enamel for exterior use and shall meet FS TT-C-595 Color No.14036. Color shall be standard Black Green by Spraylat Corporation, Product No. PRL96012, Control No. R8131. Color chips shall be furnished for approval before painting operations begin.

Application:

The preparation for finishing of new equipment shall be as follows:

Standards, posts, pedestals and any other galvanized surfaces to be painted shall be cleaned and coated with the approved primer best suited for the surface. The traffic signal cabinets shall not be painted.

If approved prime coat has been applied by the supplier, other than for repairs, prime coat will not be required.

Standards and posts shall have at least two coats of Traffic Paint applied as follows:

Standards with bracket mounted signals shall be painted in their entirety.

All signal heads, signal head mountings, outside of hoods, back of back plates and housing shall have one or more coats of primer followed by two coats of Black Green Enamel.

Louvers as specified, interior of signal hoods and fronts of back plates shall have one or more coats of primer followed by two coats of Lusterless Black Enamel. Factory enameled equipment and materials shall be examined for damaged paint after installation, and such damaged surfaces shall be repainted to the satisfaction of the Engineer. Factory-applied enamel finish in good condition and of appropriate color will be acceptable.

Blast cleaning of galvanized metal surfaces in good condition, as determined by the Engineer, will not be permitted.

Combination Coating - Galvanized/Powder Top Coat:

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The preparation for finishing standard signal equipment shall be as follows:

Surface Preparation:

Prior to being incorporated into an assembled product, steel plates 18.75 mm or more in thickness shall be blast cleaned when required to remove rolled-in mill scale, impurities and non-metallic foreign materials. After assembly, all weld flux shall be mechanically removed. The iron or steel product shall be degreased by immersion in an agitated 4.5% - 6% concentrated caustic solution elevated to a temperature ranging from 65 to 88 degrees Celsius. It shall then be pickled by immersion in a heated sulfuric acid solution of 6% - 13% concentration, with a controlled temperature between 65 to 88 degrees Celsius. It shall next be rinsed clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Final preparation shall be accomplished by immersion in a concentrated zinc ammonium chloride flux solution heated to 54 degrees Celsius. The solution's acidity content shall be maintained between 4.5 - 5.0 pH. The assembly shall be air dried to remove any moisture remaining in the flux coat and/or trapped within the product.

Zinc Coating:

The product shall be hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc between 432 - 454 degrees Celsius. The entire product shall be totally immersed with no part of it protruding out of the zinc (no double dipping). This is to limit a risk of trapped contaminants containing chlorides and reduce the risk of bare spots (bare spots can occur when flux on the steel surface is burned away by heat of the first dip). Maximum aluminum content of the bath shall be 0.01%. Flux ash shall be skimmed from the bath surface prior to immersion and extraction of the product to assure a debris-free zinc coating.

Exterior Coating:

All galvanized exterior surfaces shall be coated with a Urethane or Triglycidyl Isocyanurate (TGIC) Polyester Powder to a minimum film thickness of 2.0 mils. Prior to application, the surfaces to be powder coated shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 232 degrees Celsius for a minimum of one hour in a gas fired convection oven. The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the zinc coated substrate to a minimum of 176 degrees Celsius and a maximum of 204 degrees Celsius. The thermosetting powder resin shall provide both intercoat as well as

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substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Packaging:

Prior to shipment, small poles shall be wrapped in 5 mm thick ultraviolet inhibiting plastic backed foam. Larger poles shall be cradled in 25 mm rubberized foam base.

SURGE PROTECTION

GENERAL:

The placement of equipment and cabinet wiring shall be arranged so that the distance between each conductor's point of entry and the protector shall be as short as possible, and the protector shall be located as far as possible from electronic equipment. All wiring between the surge protectors and the point of entry shall be free from sharp bends. Surge protection will not be measured for separate payment.

SURGE PROTECTORS:

General:

All ungrounded conductor wires entering or leaving any controller cabinet or camera housing shall be equipped with surge protectors, suitable for protection of electrical systems operating at 600 volts and less, and in accordance with these Special Provisions. By definition, the term Surge Protectors describes the equipment necessary for the protection of all AC electrical circuits, twisted pair, and coaxial communications circuits from the effects of lightning-induced voltages, utility switching transients, and internally-generated transients.

Surge protectors shall be grounded to the ground rod serving the controller cabinet or to the cabinet wall.

Surge protectors shall be provided for the following types of conductors and cables: low-voltage signal pairs and 120-volt electric power lines.

Surge protectors shall meet the following general requirements:

Maximum continuous operating voltages must not be less than 115 percent of the nominal system operating voltage.

All surge protectors must be UL 1449 listed and bear the UL label.

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All metal oxide varistors used for surge protection shall be 20 mm in diameter or larger and shall be rated in the appropriate voltages.

Low-voltage Signal Pairs:

Low-voltage Signal Pairs shall be protected by two-stage, plug-in surge protectors. The protectors shall meet or exceed the following minimum requirements:

The protectors shall suppress a peak surge current of up to 10K amps.

The protectors shall have a response time less than five (5) nanoseconds.

The protector shall clamp the voltage between the two wires at eight (8) volts, and clamp the voltage between each wire and ground at 50 volts.

The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices .

There shall be no more than two pairs per protector.

It shall be possible to replace the protector without using tools.

120-volt Electric Power Lines:

120-volt Electrical Power Lines shall be protected by a filtering, two-stage surge protector. The protector shall be installed on the load side of the cabinet main circuit breaker. The two stages shall be electrically separate, so that the first stage protects all equipment using the power, while both the first and second stages protect electronic equipment. There shall be no maximum load for the first stage. The second stage shall be capable of protecting equipment drawing a total of 10 amps. The protector shall clamp both the main line and the main neutral at 250 volts. The surge protector shall meet or exceed the following minimum characteristics:

The protector shall accommodate a continuous service current of up to 10 amps at 120 VAC and 60 Hz.

The protector shall suppress surges of up to 20,000 amps.

The clamp voltage shall be 250 volts at 20 KA.

The voltage during a surge shall never exceed 250 volts.

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A radio interference filter shall also be provided on the power line. The filter shall be wired in series between the main cabinet circuit breaker and the power input to the controller and auxiliary devices. The filter shall provide a minimum attenuation of 40 dB over a frequency range of 20 kHz to 60 mHz and shall be hermetically sealed in a metal case. The current rating of the filter shall meet or exceed the rating of the main cabinet circuit breaker.

BONDING AND GROUNDING:

All communications cable shields shall be bonded at all designated termination points. The grounding or bonding conductor shall be an insulated #6 AWG copper wire, unless otherwise indicated in the Plans. The shield system shall be entirely insulated except at the ground rod. No other devices shall be bonded to the shield system or its ground rod. Only the shield of the outgoing communications cable shall be grounded at each cabinet. The shield of the incoming communications cable shall be left ungrounded or "floating". Extra care shall be taken so that the shield of the incoming cable does not touch the walls of the cabinet, forming a ground loop.

All conduit, controller cabinets, CCTV cabinets, anchor bolts, reinforcing bar cages, and metal poles and pedestals shall be made mechanically and electrically secure to form a continuous system and shall be effectively grounded. The grounding or bonding conductor shall be #6 AWG bare copper wire, unless otherwise shown in the Plans.

Ground electrodes shall be 1-piece lengths of copperweld ground rod not less than three (3) meters in length and six (6) mm diameter, except where noted, installed in accordance with the NEC. Grounding of conduit and neutral shall be accomplished as required under the NEC except that grounding conductors shall be #6 AWG, unless otherwise indicated in the Plans. Exposed ground conductors shall be enclosed in 12 mm diameter conduit and shall be bonded to the ground electrode with a copper ground clamp.

Each camera and its housing shall be electrically bonded to the mounting bracket by copper braided wires equivalent to #6 AWG conductor with aluminum crimped connectors and grounding star washers. The mounting bracket, in turn, shall be electrically bonded to the metal pole, and the pole to the grounding rod.

All poles shall be connected to earth ground using exothermic welds.

The ground system resistance-to-ground shall be measured as soon as the installation is completed, and shall not be higher than 20 percent more than the objective value of 25 ohms. The resistance-to-ground shall be measured by a ground tester using either the "Fall of Potential/Three-Point Measurement Method" or the "Empirical 62% Method." If the measured resistance is greater,

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the ground system shall be enhanced by installing additional ground rods or by using ground treatment methods that are permanent, environmentally-safe, moisture-independent, and non-corrosive. Ground treatment containing metallic salts are not acceptable. The measured ground resistance shall be recorded and reported to the Engineer.

LED TRAFFIC SIGNALS

OPTICAL UNIT

The optical unit shall be a 12in LED (light emitting diode). The Physical, Mechanical, Optical and Light Output, Electrical, Environmental, Production Testing, Documentation and Warranty Requirements are described in this section.

General:

The LED traffic signal module unit shall be designed for installation into specified traffic signal housing and shall not require special tools for installation. The 12in LED traffic signal modules shall fit into specified traffic signal housings without modifications to the housing.

Installation of an LED signal module shall be weather tight, fit securely in the housing; and shall connect directly to electrical wiring.

If proper orientation of the LED unit is required for optimum performance, prominent and permanent directional markings(s), that is an "UP arrow", for correct indexing and orientation shall exist on the unit.

The manufacturer's name, serial number, manufactured date and other necessary identification shall be permanently marked on the backside of the LED traffic signal module. A label shall be placed on the unit certifying compliance to ITE standards.

Physical and Mechanical Requirements:

The LED traffic signal shall be a single, self-contained device, not requiring on-site assembly for installation into traffic signal housing.

The unit shall be serviceable and repairable without the use of special tools. The LED module shall be constructed to allow the replacement of the outer lens and/or the light engine when needed. The external lens shall be smooth on the outside to prevent excessive dirt/dust buildup.

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The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

Each LED traffic signal module shall comprise a UV stabilized polymeric outer shell, multiple LED light source, and a regulated power supply. LED are to be mounted on a polycarbonate positioning plate or conformally coated PC board. The external lens shall offer sun phantom protection to reduce driver glare or hot spot in sunlight.

Optical and Light Output Requirements:

The LEDs shall be manufactured using AlInGaP (Aluminum-Indium-Gallium-Phosphorous) technology or other LEDs with lower susceptibility to temperature degradation than AlGaS (Aluminum-Gallium-Arsecic). AlGaS LEDs will not be allowed.

The number of each color and type of the LED signal module shall be specified in the plans. The modules shall be suitable for span wire and mast arm mounted signals.

The red and green modules shall be similar in appearance and visibility to an incandescent lamp. The red and green modules shall meet the minimum luminous intensity requirements in the following tables:

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Minimum Luminous Intensity for LED Signal Modules
(Based on Kentucky Transportation Cabinet Department of Highways Division of Traffic
Specification for LED Traffic Signal Modules for Expanded View)

GRID SPECIFICATION FOR 12IN RED

Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U					3	10	10	3				
12.5U					14	20	20	14				
7.5U					20	54	54	20				
2.5U					58	220	220	58				
2.5D			77	141	251	339	339	251	141	77		
7.5D	16	38	89	145	202	226	226	202	145	89	38	16
12.5D	16	22	34	44	48	50	50	48	44	34	22	16
17.5D	16	20	22	22	22	22	22	22	22	22	20	16
22.5D			7			10	10			7		
27.5D												

GRID SPECIFICATION FOR 12IN GREEN

Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U					7	20	20	7				
12.5U					27	41	41	27				
7.5U					41	108	108	41				
2.5U					115	441	441	115				
2.5D			154	283	501	678	678	501	283	154		
7.5D	32	77	178	291	404	452	452	404	291	178	77	32
12.5D	32	44	69	89	97	101	101	97	89	69	44	32
17.5D	32	41	44	44	44	44	44	44	44	44	41	32
22.5D			14			20	20			14		
27.5D												

The red and green modules are required to meet luminous values that are 115 percent greater than the required minimum values in the specification at time of production. The yellow modules shall meet Caltrans specifications for light intensity, and all other applicable ITE specifications. The LED arrow module

shall have a full, filled profile, without the individual LED's being visible. The arrows shall meet all applicable ITE specifications, and Caltrans specifications on light intensity. Independent laboratory reports shall be supplied to verify modules meet the above requirements.

The red and green LED modules shall include a built-in "shut-off" feature, once the module's light intensity falls below ITE minimum requirements. Upon detection of this the circuit will disable any current generating circuitry within 100msec., to allow detection of this failure by conflict monitor and load switch. Also, any power supply failure will give an open circuit..

ARROW INDICATIONS (in candelas/m²)

	Red	Yellow	Green
Arrow Indication	5,500	11,000	11,000

LEDs for arrow indications shall be spread evenly across the illuminated portion of arrow area. Arrow LED modules shall be tested in conformance with California Test 3001.

Measured chromaticity coordinates of LED signal modules shall conform to the chromaticity requirements of the following table, for a minimum period of 60 months, over an operating temperature range of -40°C to +74°. Each LED traffic signal lamp unit shall meet the minimum requirements for light output for the entire range from 80 to 135 volts.

CHROMATICITY STANDARDS

Red	Y: not greater than 0.308, or less than 0.998x
Yellow	Y: not less than 0.411, nor less than 0.995-x, nor less than 0.452
Green	Y: not less than 0.506 – 0.519x, nor less than 0.150 + 1.068x, nor more than 0.730-x

LED signal modules tested or submitted for testing shall be representative of typical production units. Optical testing shall be performed with LED signal modules mounted in standard traffic signal section without visors or hood attached to the signal sections.

Photometric, luminous intensity and color measurements for yellow LED signal modules shall be taken immediately after the modules are energized. The ambient temperature for these measurements shall be 25°C. Test results for this testing shall record the current, voltage, total harmonic distortion (THD) and power factor (PF) associated with each measurement.

Electrical:

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH standard.

Each unit shall incorporate a regulated power supply engineered to electrically protect the LEDs and maintain a safe and reliable operation. The power supply shall provide capacitor filtered DC regulated current to the LEDs per the LED manufacturer specification. Design of the power supply shall be such that the failure of an individual component or any combination of components cannot cause the signal to be illuminated after AC power is removed. Any deviation without prior testing and approval from LADOTD shall be grounds for automatic removal from the LADOTD Bidding Qualifications for an undetermined time. The power supply must be current regulated.

The LED traffic signal module shall operate on a 60 Hz AC line voltage ranging from 80 volts RMS to 135 volts RMS with less than 10 percent light intensity variation. Nominal rated voltage for all measurements shall be 120 ± 3 volts rms. The circuitry shall prevent flickering over this voltage range. The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors in signal controller units the procuring traffic authority customer has in use.

The LED traffic signal module shall be operationally compatible with TS1, TS2 and 2070 controllers, conflict monitors with plus features, and malfunction management units currently used by LADOTD and any other Louisiana government entities. In case of conflicts between specifications, the latest LADOTD specification will control.

The individual LED light sources shall be wired so that a catastrophic failure of one LED light source will result in the loss of only that one LED light source in the LED signal module. A circuitry that will shutdown the LED module and power supply when 85% ITE light intensity specifications are not satisfied shall be provided. The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.6, NEMA Standard TS-2, 1992.

Any deviation to product design after testing and approval from LADOTD shall consist of a new model and must be resubmitted for acceptance. Failure to adhere to this requirement shall be grounds for automatic removal from the LADOTD Bidding Qualifications for an undetermined time. Random testing of average production modules will be held to ensure compliance with specification.

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Two capitive, color-coded, 36 in long 600 V, 20 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection.

LEDs shall be arranged in no less than 5 equally loaded circuits.

The LED signal shall operate with a minimum 0.90 power factor or greater at 25°C and at the nominal operating voltage.

Total harmonic distortion (current and voltage) induced into an AC power line by a signal modules shall not excess 20 percent.

LED signal modules and associated on-board circuitry shall conform to the requirements in Federal Communications Commission (FCC) Title 47, SubPart B, Section15 regulations concerning the emission of electronic noise.

Environmental Requirements:

The LED signal module shall be rated for use in the ambient operating temperature range of -40°C to + 74°C.

The LED signal module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991, for Type 4 enclosures to protect all internal LED, electronic, and electrical components. Evidence of internal moisture after testing shall be cause for rejection.

Production Testing Requirements:

Each new LED signal modules shall be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, in an ambient temperature of 60°C (+140°F) in order to cause any electronic infant mortality to occur, and to ensure electronic component reliability prior to shipment.

After burn-in, LED signal modules shall be tested for rated initial luminous intensity in conformance with the provisions in "Optical and Light Output Requirements." Before measurement, LED signal modules shall be energized at rated voltage, with 200 percent on-time duty cycle, for a time period of 30 minutes. Test results for this testing shall record the current, voltage, total harmonic distortion (THC) and power factor (PF) associated with each measurement.

Documentation Requirements:

Each LED traffic signal module shall be provided with the following documentation:

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Complete and accurate installation wiring guide.

Contact name, address, and telephone number for the representative, manufacturer, or distributor for warranty repair.

If requested by the purchaser, the bidders shall supply schematics for all electronics

A copy of a test report certified by an independent laboratory that the LED traffic signal module model submitted meets ITE Standards for light distribution, chromaticity and power (consumption, power factor and harmonic distortion) must be submitted. The tables in Section 3 of this specification replace the values in Table 1 of Section 4.1.1 of the ITE VTCSH. In addition, the independent lab report shall specify the drive current being supplied to individual LEDs within the unit. Designs that require LEDs to be operated at currents greater than the LED manufacturer's recommended drive current will not be allowed.

One schematic diagram shall be provided for each LED module, along with any necessary installation instructions.

For each unit submitted, the manufacturer name, brand and model number for LEDs used shall be provided, along with the LED manufacturer's recommended drive current and degradation curves.

Warranty:

LED signal module shall be warranted against any failure due to workmanship, material defects or intensity within the first 60 months of field operation. The LED module shall meet or exceed minimum luminous intensity values during the first 60 months of field operation.

A written warranty to provide the replacement or repair of LED signal modules that exhibit luminous intensity of less than the minimum values specified in Table 1 of ITE specification VTCSH-Part-2 July 1998, within the first 60 months from the date of delivery shall be provided. Replacement LED signal modules shall be provided within 5 days after receipt of failed LED signal modules at no cost to the CITY, except the cost of shipping the failed modules.

TRAFFIC SIGNSGENERAL

All signs associated with this project unless otherwise noted shall conform to Section 1015 of the Louisiana Standard Specifications for Roads and Bridges, 2006 Edition.

ONE PIECE FLEXIBLE DELINEATOR POSTGENERAL

Flexible delineator posts shall be produced from recycled plastics, meeting the requirements of ASTM D5033-90, Sections 3.1.7 and 3.1.18.

CONSTRUCTION

All delineator posts shall be manufactured in the U.S.A. The post shall be made with greater than 51% post-consumer, engineered recycled thermoplastic, with the total recycled content being greater than 70%. Post will be modified with virgin modifiers, pigments and UV stabilizers for outdoor weatherability. Posts shall be one color plastic throughout and have a solid plastic profile without fillers. Posts shall satisfy the following typical properties:

<u>Physical Properties</u>	<u>Property</u>	<u>ASTM</u>
Specific Gravity, Solid	1.20 Max	D792
Water Absorption, 24 hrs., 73F	.5% Max	D570

<u>Mechanical Properties</u>	<u>Property</u>	<u>ASTM</u>
Tensile Elongation at break	30% Min	D638
Rockwell Hardness R-Scale	100 Min	D785

<u>Izod Impact</u>	<u>Property</u>	<u>ASTM</u>
1/8" Notched	12.0 Min	D256
1/2" Unnotched	No Break	D256
Ft. Lbs./In		

<u>Thermal Properties</u>	<u>Property</u>	<u>ASTM</u>
OTTJAL, 66 PSI at .250	200 F Min	D648
Brittleness Temperature	-100 F Max	D746

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THICKNESS

The post shall be .155" thick plus or minus .020".

LENGTH

Post shall be 4 feet length plus or minus .250".

REFLECTIVE SHEETING

Shall be of a specified grade affixed to the post by the manufacturer.

RECYCLABLE/RETURNABLE

Flexible posts will be recyclable by the manufacturer. Posts that become damaged under normal use will be returned to the manufacturer, reground then reused to make other delineation products. The manufacturer will offer credit toward the next purchase for products that are returned.

MEASUREMENT AND PAYMENT

Measurement shall be provided follows:

Signal Supports will be measured per each support, in place and accepted.

Signal Heads will be measured per each signal head, in place and accepted.

Signal Controllers will be measured per each signal controller, in place and accepted.

Conductors will be measured per linear foot of each size conductor, in place and accepted.

Jack and Bore Conduit will be measured per linear foot of conduct, installed by jacking and boring, in place and accepted.

Conduit shall be measured by the linear foot computed horizontally along the conduit, complete and in place, the measurement being made from the point of beginning to the point of termination of each section of conduit. No extra length will be-allowed for rises into pullboxes, manholes, poles or controllers.

Underground Junction Boxes will be measured per each junction box, in place and accepted. This work shall include furnishing and installing the

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junction box, including excavation, and furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Traffic Manhole will be measured per each. This work shall include furnishing and installing the manhole, including excavation, and furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Loop Detectors (Saw Loop Slot in Pavement) shall be measured by the linear foot computed horizontally along the perimeter of the cut made in the pavement plus the cut made from the loop slot to the curb or edge of pavement. No extra measurement will be allowed for the required overlaps.

Cable Loop Lead In shall be measured by the linear foot computed horizontally along the perimeter of the turns installed plus twice the horizontal distance from the loop to the pullbox. No extra measurement will be allowed for excess wire left in the pullbox.

Optical Emitters will be measured per each optical emitter, in place and accepted.

Unidirectional Optical Detectors will be measured per each detector, in place and accepted.

Trenching and Backfilling will be measured per linear foot of trenching and backfilling completed and accepted.

Signs will be measured per square foot of signage, in place and accepted.

Payment shall be made at the contract unit price as follows:

Item S-120, Signal Support (Pedestal Mounted), per Each.

Item S-121, Signal Support (25' Single Mast Arm), per Each.

Item S-122, Signal Support (30' Single Mast Arm), per Each.

Item S-123, Signal Support (35' Single Mast Arm), per Each.

Item S-124, Signal Support (40' Single Mast Arm), per Each.

Item S-125, Signal Support (45' Single Mast Arm), per Each.

Item S-126-A, Signal Head-Horizontal (3-Section, R Y G), (12" LED Lens), per Each.

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Item S-126-B, Signal Head-Vertical (3-Section, R Y G), (12" LED Lens), per Each.

Item S-126-C, Signal Head-Vertical (3-Section, R YLT GLT), (12" LED Lens), per Each.

Item S-126-D, Signal Head-Horizontal (3-Section, R YRT GRT), (12" LED Lens), per Each.

Item S-127, Signal Controller (NEMA TS-2, Type 6 Base Mounted Cabinet), per Each.

Item S-128, Conductor, 7C (Signal, #14 AWG Stranded) Traffic Signal Cable, per Linear Foot.

Item S-129, Jack or Bored Conduit, per Linear Foot.

Item S-130, Signal Service (Pedestal Mount), per Each.

Item S-131, Conduit 1" PVC in Earth, per Linear Foot.

Item S-132, Conduit 2" PVC in Earth, per Linear Foot.

Item S-133, Conduit 3" PVC in Earth, per Linear Foot.

Item S-134, Conduit 3" PVC Jack and Bore, per Linear Foot.

Item S-135, Conduit 4" PVC in Earth, per Linear Foot.

Item S-136, Conduit 1" Rigid, per Linear Foot.

Item S-137, Underground Junction Box (Type "D"), per Each.

Item S-138, Underground Junction Box (Type "F"), per Each.

Item S-139, Traffic Manhole, per Each.

Item S-140, Loop Detectors (Saw Loop Slot in Pavement), per Linear Foot.

Item S-141, Cable Loop Lead In, per Linear Foot.

Item S-142, Optical Emitter, per Each.

Item S-143, Conductor, 3C (Signal, #14 AWG Stranded) Optical Detector Cable, per Linear Foot.

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Item S-144, Uni-directional Optical Detectors, per Each.

Item S-146, Conductor, 1-6Pr Interconnect Cable, per Linear Foot.

Item S-149, Conductor, 2C/OS (Loop Lead-In, #14 AWG Stranded) Loop Wire, per Linear Foot.

Item S-152, Conduit 2" PVC Jack and Bore, per Linear Foot.

Item S-153, Conduit 4" PVC Jack and Bore, per Linear Foot.

Item S-154, Trenching and Backfilling, per Linear Foot.

Item S-155, Signs (R3-1), per Square Foot.

Item S-156, Signs (R3-2), per Square Foot.

Item S-157, Signs (R3-5R), per Square Foot.

Item S-158, Signs (R3-7R), per Square Foot.

Item S-159, Signs (R5-1), per Square Foot.

Item S-160, Signs (R10-10), per Square Foot.

Item S-161, Signs (Special, Yield to Pedestrian), per Square Foot.

Item S-162, Signs (Special, Street Name), per Square Foot.

Item S-163, Conductor, 3C (Power, #6 AWG), per Linear Foot.

No separate payment will be made for painting or combination coating of hot dip galvanizing and powder top coat.

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ITEM S-148, STREET NAME SIGNS (ON NEW POST)

GENERAL PROVISIONS

The Contractor shall supply and erect street name signs complete in place according to the specifications below.

DIMENSIONS

8" High
24", 30", or 36" Long
No faces longer than 36"

MATERIAL

Aluminum plate 0.08 inch thick with all corners rounded on approximately $\frac{3}{4}$ " radius.
All holes $\frac{7}{32}$ ".

LEGEND & BORDER

See Standard Plan STD 11, Plan Sheet No. 357

COLOR

See Standard Plan STD 11, Plan Sheet No. 357

POST

Galvanized steel 2" x 2" square post 16 gauge 0.065 inch wall, with galvanized cap, or approved equivalent. The sign post will be installed with 7 foot vertical clearance and 3' of post underground.

BRACKET AND HARDWARE

Bracket (if needed) and hardware in galvanized steel approved by Department of Public Works.

LOCATIONS

The number and location of street name signs shall be approved by the Traffic Engineer of the Department of Public Works. In principal all existing vertical street name signs shall be replaced with new horizontal street name signs. All old, damaged or illegible signs shall be replaced.

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FOOTING

Dimensions: 9" x 9" x 24"
Material: 3000 psi PC Concrete

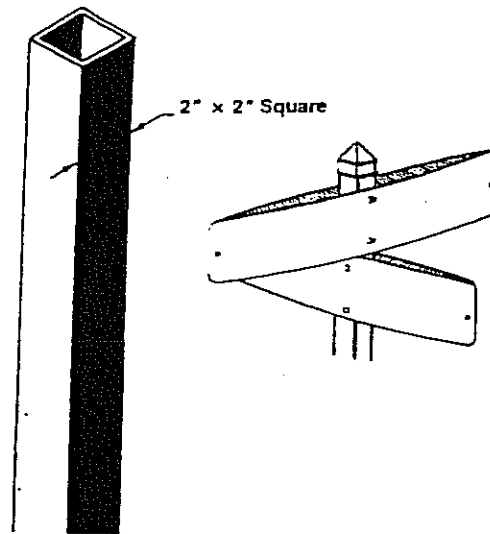
MEASUREMENT AND PAYMENT

Measurement for "Street Name Sign (on New Post)" will be per each, in place and accepted.

Payment will be made at the contract unit price under:

Item S-148, Street Name Signs (on New Post), per Each.

**MOUNTING STREET NAME AND TRAFFIC CONTROL SIGNS
POSTS ARE 16 GAUGE, 0.065 WALL, GALVANIZED FOR LONG LIFE**



STREET NAME SIGN EXHIBIT

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ITEM S-150, IMPACT ATTENUATOR

GENERAL PROVISIONS

This item consists of furnishing, installing, maintaining and subsequently removing the device shown on the plans in accordance with manufacturer's recommendations, the directions of the Engineer and the following requirements.

MATERIALS AND SCOPE

Impact attenuators shall be either the Kinetic or the inertial type, as shown on the plans. If the plans do not specify any particular type, either type may be installed, provided that the physical conditions of the roadway allow their application. Attenuators must have been successfully crash tested and conform to the requirements of NCHRP 350, Test Level 3. The Contractor shall submit information on the type, size and the manufacturer of the attenuator he intends to use to the Project Engineer for forwarding to the Bridge Design Section for review and approval.

Impact attenuators shall be installed and maintained in good operational condition by qualified personnel until they are no longer required on the project and the Engineer approves their removal.

All impact attenuators shall become the property of the Contractor and removed upon completion of the Project.

MEASUREMENT AND PAYMENT

Measurement for "Impact Attenuators" shall be per each, and shall include the installation, maintenance, relocation and removal of the impact attenuators.

Payment will be made at the contract unit price under:

Item S-150, Impact Attenuator, per Each.

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ITEM S-151, POLICE TRAFFIC CONTROL

GENERAL PROVISIONS

This work consists of furnishing a police officer for vehicular traffic control in accordance with directions from the Project Engineer.

PROCEDURES

In order to assure the safe and efficient flow of vehicles and pedestrians through and around the construction area, the Contractor shall, from time to time, when necessary and at the discretion of the Engineer, employ police officers whose duties will be to assist in efforts to maintain a safe and secure work site. Those officers employed shall be acceptable to the NOPD and have full authority and jurisdiction to carry out their task. Prior to employing police officers for traffic control, the Contractor must obtain written approval from the Engineer/Owner.

MEASUREMENT AND PAYMENT

Measurement for "Police Traffic Control" shall be the actual hours each police officer works in the field as verified by the Engineer or his authorized representative.

Payment will be made at the contract unit price under:

S-151, Police Traffic Control, per Hour.

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**ITEM S-201, SEWERAGE AND WATER BOARD ELECTRICAL
DUCTBANK AND MANHOLES, COMPLETE**

GENERAL PROVISIONS

This item consists of constructing the Sewerage and Water Board Electrical Ductbank and Manholes in accordance with plan details and the following requirements.

The Instructions to Bidders, General Conditions and all other Contract Documents are hereby made a part of this specification to the same extent as if written out in full.

All systems indicated on the drawings and/or in the specifications shall be complete, tested and ready for operation to the Engineer's and Owner's satisfaction.

The Contractor shall examine the site of work to compare it with the Drawings and Specifications and satisfy himself as to the existing conditions and limitations, the actual levels, etc. No allowance shall subsequently be made to the Contractor by reason of his failure to have made such examinations or of any error on his part.

SCOPE

The work to be performed under this contract consists of furnishing and delivering all labor, materials, supervision, construction equipment, mechanical and electrical equipment, travel, utilities, transportation, supplies, tools and services necessary for installing new underground electrical ductbank, manholes, excavation, trenching and backfill, and other incidental work as specified in the Contract Documents.

Without restricting volume of generality of above, work to be performed under this section includes, but is not limited to the following items of work:

Construction of Reinforced Concrete Underground Electrical Ductbanks.

Construction of Electrical Manholes.

Furnishing and installation of new conduits as per specifications.

All excavation, trenching, and backfill (Clear Batture Sand) for new reinforced concrete ductbank and manholes.

Cleaning, swabbing and mandrelling of new duct system.

Providing cable racks in each manhole.

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Raise or lower all existing and new electrical manholes and cable test points to final grade.

Removal and replacement of existing power pole.

Furnishing and installation of new Pole Guy and Anchor Assembly.

Cleaning up and removal of all debris and surplus materials.

Removal of existing reinforced concrete encasement from electrical ductbank (Feeders 402, 404 and spare conduits) within New Manhole No. 4.

Providing temporary electrical service during construction period.

It is the ultimate intent of this contract to provide a fully operational power distribution system. It is intended that all new power and control systems be installed and made properly operational in such a manner that Drainage, Sewer and Water Systems, dependent on existing power generation and control equipment, are not impaired or otherwise impeded in any way.

LOCATION OF CONTRACT WORK

The site of the work is located on Earhart Boulevard between Eagle and Dublin Streets, New Orleans, LA.

All prospective bidders are directed to inspect the site and acquaint themselves with the local conditions.

LAW, PERMITS AND REGULATIONS

All equipment furnished and all work done shall be in strict accordance with all governing agencies, including, but not limited to:

LOUISIANA STATE FIRE MARSHALL

Certificates of Inspection and Approval, as applicable to various portions of the work, shall be obtained from agencies having jurisdiction thereof and delivered to Engineer prior to final acceptance of work. Pay all fees required in connection with various inspections.

SHOP DRAWINGS

On material and equipment listed below, a minimum of six (6) copies of drawings for approval shall be sent to the Engineer. No submittal shall be approved unless countersigned by Board Engineer. They shall be contained in one single submittal

within thirty (30) days after award of contract. Orders on this material and equipment shall not be placed until approval is received.

The shop drawings shall consist of Technical Literature featuring descriptions, physical dimensions and weight, wiring diagrams, connection diagrams, etc. Specific items to be submitted include the following:

Standard and Pre-Cast Manholes, Cable Racks.

VC (Schedule 40) and Rigid Galvanized Steel Conduits, Fittings and Ductbank Chairs or Separators.

Power Pole.

Pole Guy Wire and Anchor Assembly.

SUBSTITUTE MATERIALS

All materials and/or equipment indicated on contract plans and/or included in specifications by Manufacturer's Name, Catalog or Model Number has been selected to establish a standard for quality and/or function. If the Contractor wishes to substitute Material and/or Equipment of another Manufacturer because of availability or as "an equal" he shall, after signing of Contract, comply with the following:

Such Materials and/or Equipment must be submitted for Engineer's approval within forty-five (45) consecutive days after signing of contract and thereafter approved as "Equal" by the Engineer.

If Contractor fails to submit the Materials and/or Equipment substitutions within forty-five (45) days limit or if any one of the Materials and/or Equipment submitted within specified period is not approved by the Engineer, then only Materials and/or Equipment specified in the Contract Documents will be accepted.

The term "Equal" used herein is defined as meaning "Equal" in the opinion of the Engineer.

No more than one submittal of a Material and/or Equipment substitute for each item of Material and/or Equipment indicated on drawings and/or included in specifications will be reviewed for approval by the Engineer.

CODES AND STANDARDS

Wherever in the Contract Documents references are made to NEC, NESC, AWWA, ASTM, ANSI, NEMA, IPCEA, or any other standards or requirements, it shall be understood that the most current issues of the standards or requirements of the National

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Electrical Code, National Electrical Safety Code, American Water Works Association, American Society for Testing and Materials, American National Standards Institute, National Electrical Manufacturers Association, Insulated Power Cable Engineers Association, etc., are intended and shall apply, except where specific dates are specified and except to the extent that the standards or requirements may be in conflict with applicable laws, regulations, ordinances, etc., of the State of Louisiana or the City of New Orleans.

PERMITS AND CERTIFICATES

Before commencing work, the Contractor shall obtain at his own expense any permits from the City of New Orleans, Building Inspection Division that are necessary. The Contractor shall also secure at his own expense any necessary inspection certificates required after the work is done.

Evidence of compliance shall be furnished to the Engineer prior to starting work in the case of permits or within 10 calendar days after completion of that work requiring inspection certificates.

SAFETY

The Contractor shall take proper precautions to safeguard his work force and the Board's facility during his work. Personnel or employees shall be equipped with safety devices while working over water. Only Engineer approved methods of construction shall be used.

The completed installation and operations during installation shall comply with the Occupational Safety and Health Act (OSHA) and all changes in effect at the time proposals are submitted.

Sign-Out Procedure for Feeder Outages:

Feeders (130, 402 and 404) outages are required and shall be allowed to complete the work of this contract. The Contractor shall coordinate his work leading up to and during said outages with the S&WB Power Dispatcher at 865-0575 who shall be given 48 hours minimum advanced notice of his desire to schedule an outage, and shall abide by the particular cautions, requirements, and possible restrictions set by the S&WB. Special permission must be granted for feeders to be left deenergized for more than an eight hour workday.

The Contractor representative shall personally appear at Central Control Office, Carrollton Water Plant, 8800 S. Claiborne Ave., as early as possible each day he intends to perform work in close proximity to the feeders and desires clearance for protection of his personnel and equipment. The power dispatcher will either advise the Contractor that prevailing weather conditions prevent

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clearance of the feeders, or will deenergize the feeders and sign same out to the Contractor representatives name. No attempt to restore power can be made unless the Contractor representative's name has been personally removed from the feeder through the Power Dispatcher's Office.

At the expiration of each day that the feeders have been cleared, the Contractor's representative shall personally appear at the same Board facility to remove his name from the feeders. Test power will be applied to the feeders to verify their integrity and service ability.

The Contractor shall maintain a telephone at the job site at which he can be reached during the day should emergency conditions arise which will require reenergization of the feeder.

The Contractor shall furnish, in addition to the job site telephone number, his home number for use by the Power Dispatcher in the event that the feeders are not released at the expiration of each working day.

SITE SECURITY

The Contractor shall insure that the site is properly secured at the end of each work day. Fences shall be intact and the gates locked. The Contractor shall also provide and maintain all necessary flagmen, watchmen, barricades, devices as required for the protection and safety of the work and the public against personal injury and property damages. The Contractor will be responsible for any and all damages, injury or loss resulting from his failure to provide such necessary protective precautions.

STARTING POINT

The Sewerage and Water Board reserves the right to specify where the Contractor shall begin installing the manholes and ductbank; also where to install other required equipment.

After the installation of any manholes and ductbank has begun, the Contractor shall work continuously toward the other end without skipping any lengths and without leaving any ductbank unlaied unless specifically directed to do so by the Engineer in order to circumvent some obstruction.

SCHEDULING OF WORK

The Contractor is hereby advised that continuous operation of the Drainage, Sewer and Water Systems are vital to the Health, Safety, and Welfare of the City of New Orleans. The Contractor shall perform no work or cause any equipment or

system outage which may jeopardize the operation of the Drainage, Sewer and Water Systems.

Feeder Outages are required and shall be allowed to complete the work of this contract. Contractor shall coordinate his work leading up to and during said outages with the Board Engineer who shall be given 48 hours minimum advanced notice of his desire to schedule an outage, and shall abide by the particular cautions, requirements, and possible restrictions set by the Board Engineer.

MATERIALS AND WORKMANSHIP

All materials and equipment shall be new and unused, shall comply with all applicable standards of IEEE, ANSI and NEMA, and shall bear the approved device label of the Underwriter's Laboratories, Inc., if such equipment or materials has been tested and listed by UL.

The work as installed is subject to the approval of the Board Engineer. Workmanship shall be of the highest quality conforming to the best electrical installation practice. Any work or material which is rejected must be removed immediately and replaced. No sub-standard work will be accepted. The placement of conduits, sleeves, grounding conductors, and openings in slabs, foundations and walls for electrical requirements shall be properly coordinated in all respects with work of other trades and shall be determined or verified by the Contractor.

It is the intent of these specifications to receive work of the highest calibre and degree of workmanship. All work shall be performed in a workmanlike manner utilizing the highest standards and current procedures currently in effect.

Any work performed, in the sole opinion of the Engineer, to less than the highest standards of acceptable workmanship shall be redone by the Contractor at no additional cost to the Board. The decision of the Engineer regarding acceptability of workmanship shall be final and binding on the Contractor.

Only those items of materials and equipment so indicated on the drawings or so designated in these specifications will be furnished by others for installation by the Contractor. The Contractor shall furnish all other required materials and equipment whether listed or not, for a complete and operable installation.

Contractor shall continuously maintain adequate protection of all his work from damage and shall protect Board Property from injury arising in connection with his work. He shall assume cost for repair of any such damage, injury, or loss. He shall adequately protect adjacent properties and facilities of other owners.

EXCAVATION AND TRENCHING

Excavated material shall consist of all material coming within the lines of the trench and manholes.

All excavated material taken from the trenches and manholes shall be removed by the Contractor.

Excavation shall include the cost of all necessary sheeting, sheet piling, bracing and backfilling.

Where soil conditions warrant it, especially along the railroad tracks the trench must be graded in such a manner (using sheeting or sheet piling, if necessary), as to prevent the settlement of the side of the trench or the sloughing of wet material against the concrete until it is thoroughly set.

In any event, the Contractor shall be responsible for the safe construction of the trench and he shall bear any expenses which result from failure to sheet and brace the trench.

Contractor shall provide all bracing, support, etc. necessary and proper to prevent damage to existing structures, railroad tracks, ductbanks, etc. located in close proximity to the trench and shall bear all responsibility for failure to provide said support or for furnishing inadequate support.

The excavation for ductbank and manholes shall be made to the depth and section shown on the drawings unless specifically modified by the Engineer.

The cross section of the trench will be as required by the dimensions on the drawings unless otherwise specifically modified by the instructions of the Engineer. The depth of the trench at any point shall be the vertical distance from the existing surface of the ground at that point to the bottom of the trench. The width of the trench shall be measured at right angles to the length of the trench.

Should the Contractor carry his excavation beyond the limits as designated by the drawings or as specifically directed by the Engineer, no payments will be made for the excavation which is outside such designated limits.

Trenches shall be flat and level with vertical sides unless elevation changes are required to clear some existing utility or obstacle. Trench bottom shall be free of debris, lumps, much or unstable earth.

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CONCRETE

All concrete used for ductbank construction shall be Grade A, 3000 p.s.i., colored red by ten (10#) pounds dye mixed per cubic yard of concrete. Mixing shall be accomplished in the truck.

No concrete shall be poured without the Board Engineer or his representative in attendance. Any concrete which may be poured without the Engineer's approval shall be removed and repoured at no extra cost to the Board.

Concrete shall not be poured when weather is threatening or excessively cold that, in the opinion of the Engineer, the work may be flooded or impaired in any manner.

Prior to pouring, the trench shall be completely de-watered and shall be maintained free of standing water until concrete has been placed.

Concrete shall be protected from running water which may wash out its cement.

PLACING OF CONCRETE

The concrete for duct wrapping may be placed in the trench without the use of forms; but if, for his own convenience, the Contractor desires to use forms, no payment will be made therefor. Where the Contractor has carried his excavation outside the lines of the work as established by the drawings or the instruction of the Engineer, the Contractor shall either use forms or pour concrete the full width of the excavation without additional payment for the additional forms or concrete required therefor.

All conduits shall be anchored to the bottom of the trench to prevent movement or floating upon application of concrete.

Concrete shall be effectively vibrated by means of standard electro-mechanical vibrators to ensure complete flow and passage to form a solid duct without voids.

DEFECTIVE WORK

Should any voids or other defects be discovered in any part of the work when the forms are taken down, or otherwise, the defective work shall be removed at once and the space refilled with suitable material, in a proper manner.

REINFORCING STEEL

All reinforcing steel bars for the concrete shall be deformed steel bars, of the size called for on the plans, and shall meet the requirements of the prevailing standards for steel reinforcing bars fixed by the American Society for Testing Materials for Grade 60 of ASTM A615-70.

Lapping of the reinforcing steel rods, where necessary in order to make the reinforcing continuous, shall not be less than forty (40) times the diameter of the rods.

Stirrups shall be applied to the main reinforcing rods every four (4'0") feet of length.

Reinforcing of ducts which enter into manhole walls shall be run continuously through wall to tie into manhole floor reinforcement, as shown on the plans. Also, this includes pre-cast manholes.

DUCT BANKS, CONDUITS, ETC.

Duct banks shall be constructed in accordance with details shown on the plans.

Conduits within the duct banks, shall be Carlon PV-DUIT Schedule 40 PVC Conduit or rigid galvanized steel conduit, as shown on the drawings. The conduit shall be furnished complete with couplings, fittings, bends, end bells, etc., as required.

CONTRACTOR SHALL REAM ALL ENDS OF EACH LENGTH OF CONDUIT PRIOR TO INSTALLATION - NO EXCEPTIONS WILL BE ALLOWED.

All sleeves or fittings shall be threaded, made up tight, and shall be approved for concrete encasement to prevent entry of wet concrete into the duct system.

All encased conduits shall be spaced a minimum of three (3") inches apart to allow passage and flow of concrete. Minimum concrete coverage on top, sides, and bottom of conduit system shall be three (3") inches.

If soil conditions at the bottom of the trench should so warrant, the Contractor shall provide plywood chair supports of minimum six (6") inch width to prevent sinking of the chairs and conduits into unstable earth. Conduit chairs shall be installed every four (4) feet apart on centers.

All PVC bends shall be made by hot box bender process. Bends and offsets shall be made to maximum possible radius, not less than 3'-0". Factory elbows and bends shall only be used where specifically approved by the Board Engineer. Normal elevation changes, offsets, etc. shall be made by field bends to maximum radius.

Concrete encasement shall be extended a minimum of six (6") inches above grade when conduits rise from the trench. The encasement shall be sloped to prevent collection of water around the conduit risers.

EXISTING MANHOLE ADJUSTMENTS

Minor elevation changes may be accomplished by chimney construction through the addition of brick work under the casing frame. Brick work shall be limited to two (2) courses of brick and mortar in overall height. Manhole other upward adjustments shall be adjusted by removal of concrete top and buildup of walls with brick and mortar.

WARNING TAPE

A 6" wide brilliant yellow or orange polyethylene tape shall be installed above underground cables, conduits and ducts a maximum of 8" below grade.

Tape shall be imprinted "Caution Sewerage and Water Board Buried Electric Line Below".

The tape shall be ITT Blackburn UT6, or approved equal.

Installation of tape shall be witnessed by a representative of the Board.

BACKFILLING

Contractor shall backfill trench and all excavated areas with clear Batture Sand free from roots, sticks, rocks, or debris of any kind. Backfilling shall include the cost for clear Batture Sand.

Backfill shall be applied in 6" layers and shall be thoroughly tamped as each layer is applied. Each layer shall be compacted to a minimum of 95 percent of maximum density using approved mechanical compaction equipment.

Contractor shall remove all debris and excavated material from job site and completely clean project area.

All sheeting, rangers, braces used for the purpose of bracing and protecting the trench or manhole excavation shall be removed prior to backfilling.

NEW MANHOLES

Contractor shall construct new manholes in the areas indicated on the plans. Manholes shall be constructed as detailed on Drawing No. 1000-P5B for standard manholes. Inner dimensions shall be adjusted from standard required size as indicated on the plans for each manhole.

Manholes shall be constructed of standard modular-common brick (3-5/8"x2-1/4"x7-5/8") with 3/8" mortar joints. All joints shall be completely filled with mortar.

Mortar for brick masonry shall meet the requirements for Type N mortar of ASTM C270-84. Cement shall be Portland cement Type II, of ASTM C150-84. Lime shall conform to ASTM C207-79. Sand Aggregate shall conform to ASTM C144-81.

Each wall shall be leveled and plumbed. A 3/4" thick moistureproof sand-cement mortar coating shall be applied on each interior wall to prevent water seepage.

Provide cable racks, copper grounding rods, malleable iron conduit endbell fittings with plugs/caps, deadman screw anchors, eyebolts, marker tape and manhole cover lifting bars as shown on Drawing No. 1000-P5B.

The width and depth of each manhole shall be as shown on Drawing No. 1000-P5B unless specified otherwise on drawings.

Precast concrete manholes as manufacture by Brooks Product, Inc. are approved provided these manholes meet our standards of construction. Each different sized precast manhole shall be submitted for approval in lieu of the S&WB standard manhole construction.

This Contractor shall accomplish all excavation, sheeting and bracing, and he shall furnish all materials except covers and castings. Covers and castings will be furnished by the Sewerage and Water Board at its Central Yard, 2900 Peoples Avenue, New Orleans, Louisiana. Contractor shall pick up castings and covers, when required, from Central Yard.

The Contractor shall fully clean out new manholes including removal of all broken concrete, abandoned cable, mud, dirt, debris, etc. The Contractor shall demonstrate compliance to the Engineer at completion of the work.

CONDUIT, FITTINGS, SUPPORTS AND INSTALLATION

All conduit installed above ground shall be rigid galvanized steel as required by the plans. Conduits in reinforced concrete duct shall be schedule 40 PVC as previously specified.

Conduit direction changes shall be made by means of field bends. All bends in multiple conduit runs shall be concentric to provide a neat workmanlike appearance. Bends and offsets shall be made to maximum possible radius, not less than 3'-0". Factory elbows and bends shall only be used where specifically approved by the Board Engineer. Normal elevation changes, offsets, etc. shall be made by field bends to maximum radius.

Conduits shall be cut with a hack saw or power saw only - pipe cutters shall not be allowed. Conduits shall be properly reamed after cutting. Rigid galvanized steel conduits shall be threaded with standard tapered electrical conduit dies with

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five (5) full threads applied. Field cuts in steel conduit or unistrut shall be immediately coated with cold galvo compounds - no rust will be accepted.

Spare underground conduits shall be fitted with a 40# pull rope and shall be plugged with standard conduit plug approved for this purpose. Duct seal, tape, and rag plugs are unacceptable.

Each length of PVC shall have a molded bell which shall be driven fully onto straight portion by means of wood striking block and hammer blows until full penetration is achieved. Union type couplings are not allowed on PVC ducts.

Conduit entry into manholes shall be with malleable iron or galvanized steel conduit end bells set flush with manholes wall. PVC bells are not acceptable.

CLEANING OF DUCTBANK

Contractor shall flush the new ducts using water from nearest available supply or Hydrant until thoroughly cleaned. Contractor shall then swab out all ducts to remove any residual dirt and debris. Contractor shall then pull a full size solid Mandrell through each duct prior to insertion of cable or conductors.

Contractor shall cap or plug the cleaned ducts to prevent entry of foreign matter, water, dirt, debris, etc. prior to installation of the wire.

GALVANIZING

All steel parts for supporting conduit pipe shall be galvanized. Galvanizing shall be done by the commonly known "HOT DIP" process. It shall be of a quality consistent with the results obtained by the best practices and workmanship known to the trade. Sherardizing, cementation, spraying, and other process of galvanizing will not be acceptable. In the galvanizing, the weight of zinc deposited on any surface shall be in conformance with the Specifications of the American Society of Testing Materials for the material galvanized.

GROUNDING

The grounding system shall be installed in accordance with Article 250 of the National Electrical Code.

Install 10'-0" x 3/4" copperweld ground rods in all manholes. Bond all metal racking, casting and cover, etc. within manhole to the ground rod.

All equipment grounding conductors shall be either bare or green insulated stranded copper. Painted or taped insulation will not be accepted as a substitute for green insulation.

REMOVAL AND REPLACEMENT OF EXISTING POWER POLE

Furnish and install a new power pole to replace existing power pole at the intersection of Earhart and Cambronne and transfer existing conductors (O/H Feeder 130) to new pole.

Wood pole shall be a new southern yellow pine, Class 3, pressure treated with a minimum 0.80 pound Chromated Copper Arsenate preservative per cubic foot of wood as per AWPA Standards C3-80. Pole shall be turned smooth full length and shall be roofed and prior to pressure treatment. Wood pole shall conform to these specifications:

Length of Pole (feet)	Minimum Tip Circle (inches)	Minimum Circumference 6 ft. from butt	Ultimate Moment (Foot Pounds) (inches)
45	23	37.5	111,315

Pole-Setting Depth shall be 8'-0" minimum. Hole shall be dug large enough to permit proper use of tampers to the full depth of the hole. Earth shall be placed into the hole in 6" (maximum) layers, then thoroughly tamped before the next layer is placed. Surplus earth shall be placed around the pole in a conical shape to drain water away from the pole.

Furnish and install new fabricated steel conductor support sidearm, fabricated steel static line support sidearm, and hardware as per S&WB Dwg. No. 4213-P2. Also, transfer the existing insulators, lighting arresters and attachments hardware to new pole.

Provide a 1/0 stranded aluminum ground wire connected to the Static Wire (Bumdy Aluminum Crimput Connector Type YP-C28U26) attached along side of pole to a 3/4"x10'-0" driven copperweld ground rod. Connect ground wire to the ground rod with a cadweld connection using a 4/0 copper whip of maximum 6" length and transition to aluminum wire with a Cu/Al crimp connector. Also, provide a 1/2" groove wood molding penta-treated 8 ft. in length secured with staples 18" apart.

Furnish and install two (2) Angle Pole Guy Wires and Anchor Assembly as follows are an approved equal:

Two (2) Joslyn 5/8" hot dip galvanized thimbleye angle bolts C/W (2x2x1/8) inch square washers.

Two (2) Guy Strain Insulator - Chance #C809-1042 or Joslyn #L-506.

Two (2) Joslyn hot dip galvanized guy steel guard Cat. No. J1527.

Eight (8) Reliable Universal Strandvises size 7/16 Joslyn #5203.

One (1) - ten (10") inch Cam Action Power Installed Screw Anchor, 1-1/4" Dia. Rod Tripleye Hot Dip Galvanized Joslyn #J6550WCA with extensions.

7/16" seven (7) strand galvanized steel S.M. wire (guy cable). Cable lengths to be determined in field.\

The existing power pole and crossarms shall be removed and delivered to our Electric Shop at 8800 S. Claiborne Avenue, New Orleans, Louisiana.

Coordinate the removal and transferral of all other utilities to our new pole (NOPSI, Bell South, Traffic Controls and Cox's Cable Communications).

REMOVAL OF CONCRETE ENCASEMENT FROM EXISTING FEEDERS 402 AND 404 DUCTBANK

Remove existing reinforced concrete encasement from electrical ductbank (Feeders 402, 404 and spare conduits) within new Manhole No. 4.

Concrete shall be removed from ductbank using a Hand-Wielded Maul. No other mechanical, electrical or pneumatic powered equipment shall be used to remove concrete.

Work in vicinity or one of Feeders 402 and 404 shall require Sign-Out Safety Precaution. See Paragraph 1-09 for Sign-Out Procedures.

DAMAGE TO EXISTING FEEDERS

The Board has three (3) existing Feeders 130, 402 and 404 located within the construction of the new roadway. The Contractor shall take extreme caution not to damage them in connection with his work. This Contractor shall be responsible for all costs incurred in repairing any damage caused during the prosecution of the work.

Existing Feeders 402 and 404 consist of a three (3) conductor, 600 MCM, 15 KV rated lead covered cable encased in reinforced concrete or three (3) single conductors, 750 MCM, 15 KV rated installed in 5" Schedule 40 PVC conduit encased in reinforced concrete.

In the event, the Contractor damages the feeders, the following cable splice kits shall be furnished and installed to effect repairs.

A three (3) conductor 15 KV lead covered cable splice shall consist of a lead wiping sleeve with a single opening on each end to accommodate the lead cable. The lead wipe shall be accomplished using the hand wipe Solder

Method. Sealing of splice sleeve to lead jacketing by use of bar or string solder with a torch will not be permitted. A three (3) conductor lead covered 15 KV splice kit as manufactured by Mac Products, Inc. is approved. See Cable splice detail attached to specifications for a lead covered 15 KV 3/C cable splice.

Single conductor 15 KV splice kits as manufactured by Raychem, Type HVS, are approved.

AS-BUILT DRAWINGS

The Contractor shall furnish one (1) neat and legibly marked blue line set of contract drawings to depict actual "as-built" conditions.

The "as-built" drawings shall show all construction, elevation, equipment, mechanical and electrical systems and connections as installed or built.

The work under this contract will not be considered "complete" until "as-built" drawings, prepared to the satisfaction of the Engineer, are received.

There will be no direct payment for furnishing the "as-built" drawings specified above.

CLEANING UP

Contractor shall clean and remove from the right-of-way and adjacent property all surplus and discarded materials, brush, weeds, bushes rubbish, etc. accumulated on project as a result of work performed under this section.

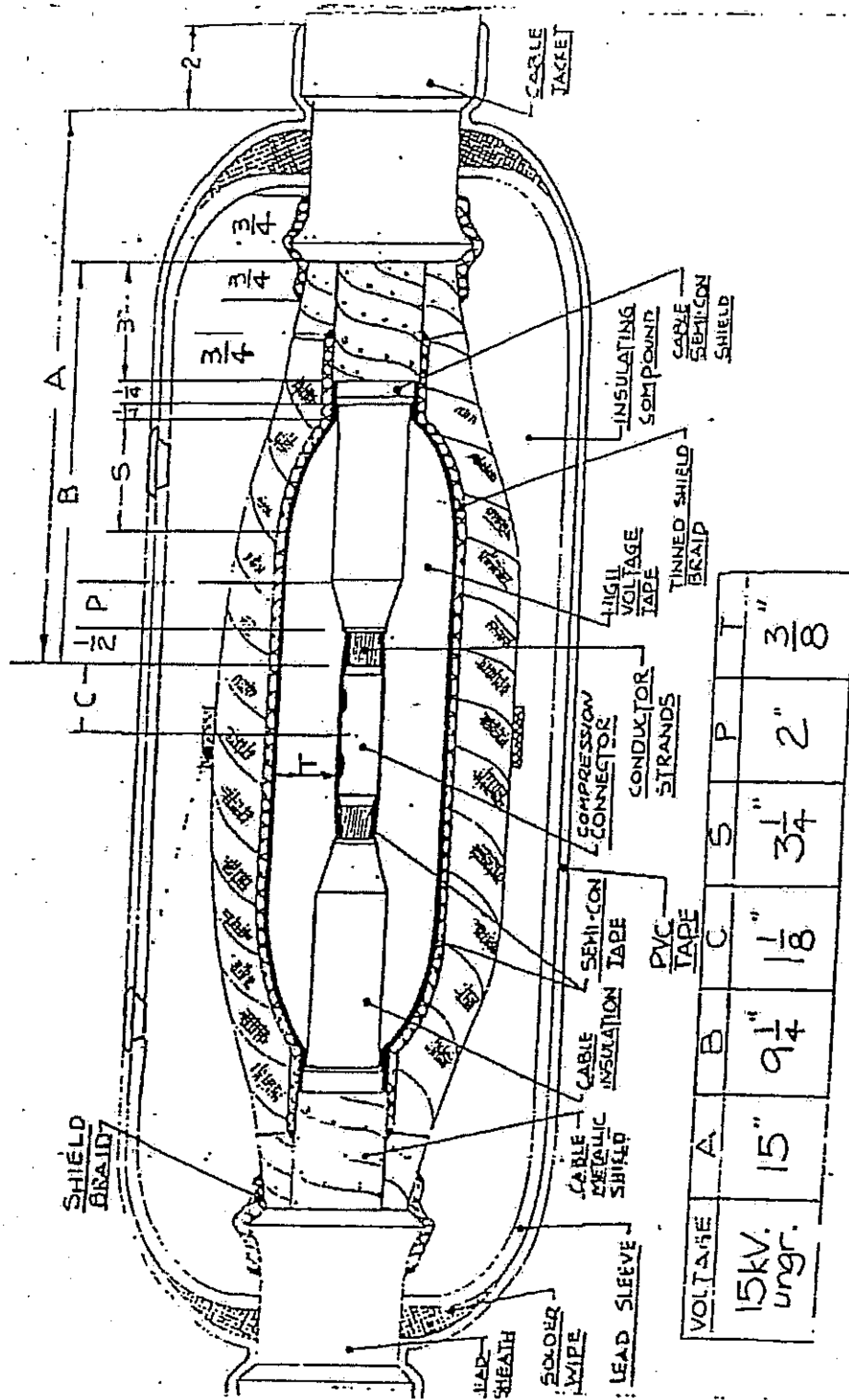
MEASUREMENT AND PAYMENT

Measurement of the "Sewerage and Water Board Electrical Ductbank and Manholes, Complete" will be lump sum, in place and accepted.

Payment will be made at the contract unit price under:

- Item S-201, Sewerage and Water Board Electrical Ductbank and Manholes, Complete, per Lump Sum.

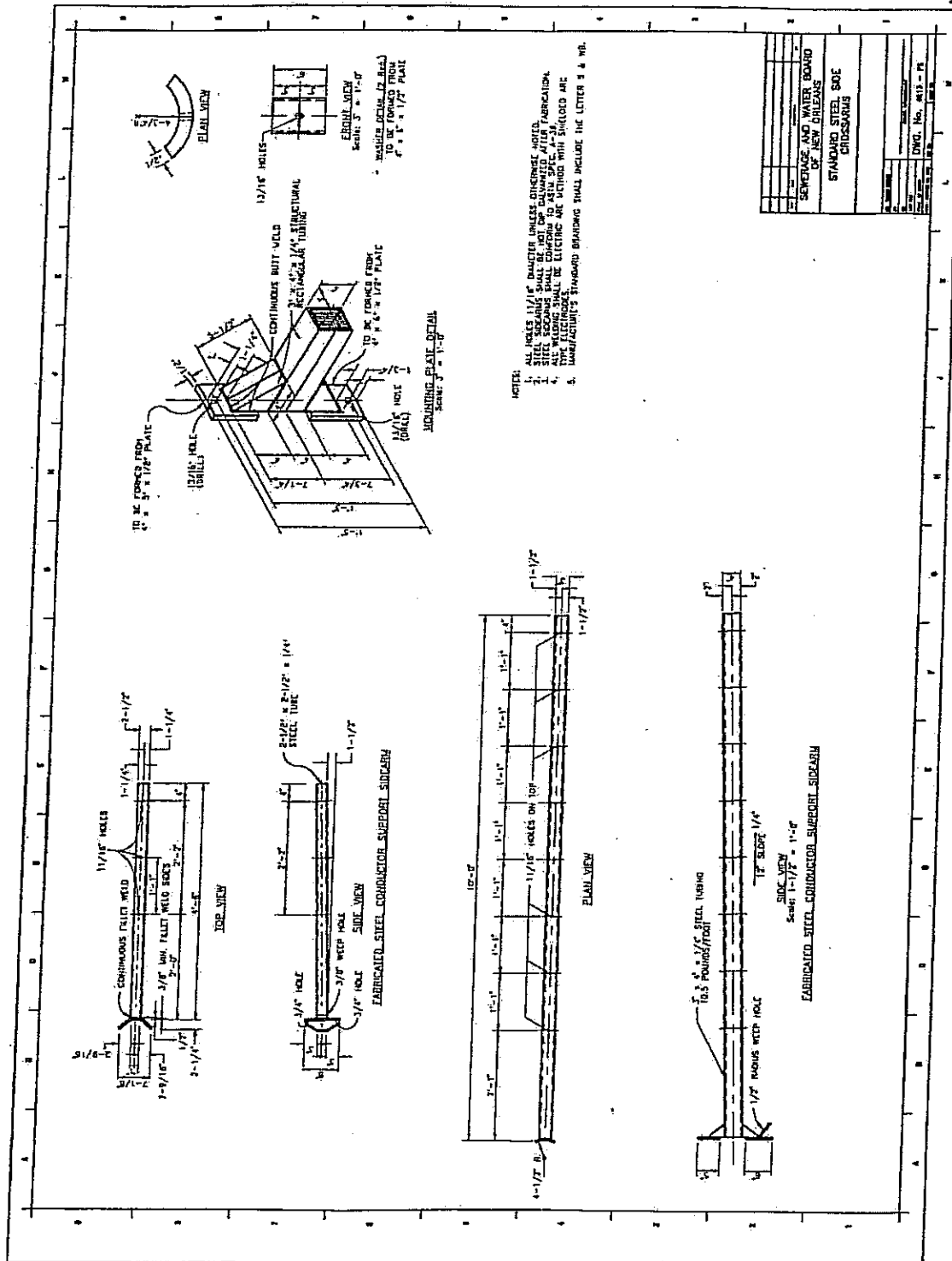
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CABLE SPLICING
DETAIL

STRAIGHT SPLICING 3/4 POLYMERIC INSULATED, 15 KV
LEAD COVERED, SHIELDED, TYPE RL53
NOTE: CRIMP SLEEVE FOR 600 MCM COPPER CONDUCTOR

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ITEMS S-202 THROUGH S-204, HOUSE DRAIN CONNECTIONS

GENERAL PROVISIONS

This item consists of adjusting existing house drain connections and tying them into the new storm drain system.

MATERIALS

The Contractor shall use 6" or greater diameter PVC pipe to connect all existing house drain connections to the new storm drain system.

One of the following two methods shall be used to make the connection:

The house drain connection shall be made by drilling the new drain line (no tapping will be allowed) and installing a rubber boot or sand impregnated PVC bell between the PVC house drain and the new drain line.

An SDP tee section shall be installed in the new drain line with the 12" lateral stub connected to the PVC house drain by a rubber boot.

The house connection may be connected to an 8" PVC pipe, which is connected to the back of the catch basin.

The type of rubber boot connector to be used shall be approved by the S&WB of New Orleans prior to the contractor beginning construction of the new storm drain system.

Adjusting house connections will include necessary adjustment of service lines. The Contractor shall furnish all required pipe, fittings and excavation and backfilling to install the connection.

MEASUREMENT AND PAYMENT

Measurement of "Drain House Connection from New Drain Line to Back of Curb (6" PVC)" will be per each installed and accepted.

Measurement of "Drain House Connection beyond Back of Curb (6" PVC)" will be per linear foot installed and accepted.

Measurement of "Collector Line to Catch Basin for Drain House Connections (8" PVC)" will be per linear foot installed and accepted.

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Payment will be made at the contract unit price under:

Item S-202, Drain House Connection from New Drain Line to Back of Curb (6" PVC), per Each.

Item S-203, Drain House Connection beyond Back of Curb (6" PVC), per Linear Foot.

Item S-204, Collector Line to Catch Basin for Drain House Connections (8" PVC), per Linear Foot.

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ITEMS S-205, ADJUST DRAIN CLEANOUT BOX

GENERAL PROVISIONS

This work consist of adjusting existing drain cleanout boxes at the locations indicated on the plans or as directed by the Project Engineer

CONSTRUCTION METHODS

All work shall be in accordance with the applicable sections of the S&WB of New Orleans' General Specifications and Standard Drawings.

MEASUREMENT AND PAYMENT

Measurement of "Adjust Drain Cleanout Box" will be per each drain cleanout box adjusted and accepted.

Payment will be made at the contract unit price under:

Item S-205, Adjust Drain Cleanout Box, per Each.

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ITEMS 702-02-H AND S-209 THROUGH S-212, SEWER LINE CONSTRUCTION

SEWERAGE CONSTRUCTION

The work shall be in accordance with the S&WB Specifications and Standard Plans except as noted.

GENERAL PROVISIONS

The Contractor shall furnish all labor, supervision, materials, equipment and supervision required for:

- Restoration of existing sewer mains by point repair.
- Replacement of existing sewer mains between manholes including tie-in into existing system.
- Relocation of existing sewer mains because of conflicts.
- Installation of new sewer mains, sewer house connections and manholes.
- Replacement of damaged sewer house connections and manholes.
- Installation/rehabilitation of manholes and cleaning of new, replaced or restored mains and manholes.

All work to be done on sewerage systems will be as shown on the plans and as directed by the Director. All workmanship, materials and tests shall conform with Section D of the General Specifications of the S&WB and S&WB Standard Dwg. No. 7260-SWD, except as noted hereinafter. The Contractor shall notify the Chief of Networks of the S&WB in writing not less than three or more than ten working days in advance of starting the job, in order to allow for scheduling the inspection of the work. Failure to do so prior to starting work will result in the Contractor being required to expose the bedding on all pipe previously installed without S&WB inspection. Copies of the notice to start work shall be sent to the Gravity Systems Superintendent.

All workmanship and materials required to perform this work, shall conform to the current General Specifications of the S&WB and the Department of Streets except as noted hereinafter.

The Contractor performing work covered in this section shall be required to coordinate his operations with the S&WB (Chief of Networks) and other utilities prior to making any excavation so that the location of their services can be identified. The Contractor shall exercise caution in making excavations to avoid damage to these services and other utilities.

The Contractor will be furnished with a list of the locations of water and sewer house connections from the S&WB. It will be the Contractor's responsibility to verify the location of these so as to avoid damage. Furnishing this information should not be construed as a waiver of the Contractor's liability, but rather an attempt on the part of the Board to minimize the Contractor's hazard. The existing house connections submitted in the lists are from S&WB records and could vary from the actual location. Any damage to the existing water, sewer and drain connections resulting from negligence will be repaired by the S&WB at the expense of the Contractor. The Contractor is also responsible for damage to other utilities and the property of others.

Sewer house connections shall be tied into the new mains and replaced with new connections where new services may be required.

INSTALLATION AND REHABILITATION OF SEWER MAINS

GENERAL

Work under this section shall consist of furnishing all labor and materials for the replacement, relocation and/or installation of sewer mains, installing new house connections, point repairs and performing all operations required for improving the sewer system. The Contractor shall provide the necessary dewatering and by-passing required during execution of this work at no direct pay.

MATERIALS AND METHODS

Pipe material for sewer mains shall be solid wall polyvinyl chloride (PVC) pipe.

The solid wall PVC pipe 6" through 15" shall be manufactured in accordance with ASTM D 3034 specifications for a special gravity sewer pipe dimensions ratio (SDR) of 26. The fittings (tees, wyes, etc.) and bell stock for truss and solid wall PVC pipe shall have a thickness not less than that of the SDR-35 solid wall PVC pipe of the same inside diameter. PVC Sewer Mains sizes 18" through 27" shall be solid wall, PVC pipe conforming to ASTM F 679, Class T-1, PVC pipe shall be type PSM Vinyl Chloride (PVC) standard lengths with integral cast bells and elastomeric gaskets as recommended by the manufacturer and ASTM D 3212.

The S&WB reserves the right to approve the type of material. The maximum allowed deflection for installed PVC sewer pipe is 7.5 percent reduction in its actual vertical inside diameter not the minimum allowed by the ASTM Specification. Pipe exceeding this allowed deflection at any time prior to acceptance, shall be removed and replaced with new pipe and reinstalled as per the above specifications at the Contractor's expense. A minimum of 5 percent of the PVC solid wall pipe will be mandrelled. The Contractor will install

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the pull lines and pass the mandrell through the mains selected by the S&WB. Tests will be witnessed by the Contractor and the S&WB. The S&WB will provide the mandrells for all tests and will have the option of passing the mandrells at any time after installation and final backfill of the trenches and before final acceptance. The Contractor shall bear the cost of retesting if required and will be assessed \$100.00 for each occurrence in each section between manholes.

Bedding and foundation for mains shall conform with S&WB Dwg. No. 4697-E5A, Rev. 9 and NO. 6187-E5, Rev. 2, except as noted below. Backfill and drainage fabric for mains shall be as noted below. Standard sheeting and bracing shall comply with Dwg. No. 4697-E5A, Rev. 9 of the S&WB General Specifications. Although the Contractor shall have the option of installing any of the above type pipe materials, the same type and size must be installed between manholes.

Installation of the solid wall PVC pipe shall conform with Section D of the S&WB General Specifications, "The Construction of Sewer" and the Plastic Pipe Association Specification UNI-B 78, "Recommended Practice for the Installation of Polyvinyl Chloride (PVC) Sewer Pipe." The trench bottom shall be relatively smooth and free from rocks, roots, etc. After the sheeting and/or foundation lumber is placed, the pipe shall be laid on a smooth bed of approved bedding material mentioned below, compacted to a density of not less than 75 percent relative density, six inches deep for the full width of the trench.

The bedding material shall be extended to six inches above the top of the pipe, well compacted (hand or mechanical) in six inch layers to not less than 75 percent relative density, as shown on the Standard Plans of the Department of Streets. The bedding material shall be placed and consolidated under the pipe haunches to provide maximum side support to the pipe while avoiding displacement and misalignment of the pipe.

Bedding material shall be 100 percent crushed aggregate listed on Qualified Product of the Louisiana Department of Transportation and Development and conforming to ASTM D 2321, Class 1A and ASTM No. 57. The S&WB reserves the right to approve the type of bedding material.

Backfill material shall be pumped sand and shall be placed at or near optimum moisture content and compacted according to one of the following procedures.

Backfill material shall be placed in layers not to exceed 12 inches. Each layer shall be compacted to a minimum of 95 percent of maximum density using approved mechanical compaction equipment.

Or,

Backfill material may be placed in layers not exceeding three (3') feet by thoroughly flooding and compacting each layer to a minimum of 95 percent maximum density at or near optimum moisture content using approved mechanical compaction equipment, prior to placing a subsequent layer. During placement, backfill materials shall be thoroughly saturated with water and satisfactory drainage of materials shall be provided.

The above backfill material and the compaction procedures shall be applied also for any service connections, and point repairs.

Drainage fabric shall be installed around the bedding and under the sand backfill according to the Standard Plans. Fabric shall extend a minimum of twelve (12") inches on each side of the trench and shall be secured to each side in a manner acceptable to the Director.

The Contractor shall provide the Director a sample of the fabric to be used on the project along with a copy of the manufacturer's minimum requirement specifications prior to the start of construction.

EXECUTION

The following applies to the replacement and relocation of existing sewer mains and the installation of new sewer mains between manholes:

The Contractor shall furnish all materials, equipment and labor to remove the existing deteriorated main, (if any) install mains and fittings (wyes, tees, etc.), including appurtenances such as tie-ins to existing system, lumber foundation, bedding, backfilling, necessary dewatering and by-passing, during the execution of this work.

While the sewer main is relocated, the existing abandoned main must be filled and plugged where shown on the plans. Sand shall be filled into the sewer line to avoid caving in of the sewer line.

All workmanship, materials and tests shall conform to Section D of the General Specifications of the S&WB, except as noted otherwise. The Contractor may use more than one crew in performing work in various sections of a system at a given time, provided he has the approval of the Director.

The new sewer mains and house connections shall be installed at the elevations and locations indicated on the plans, unless changed by the Director. The Contractor shall schedule his work so that the sewer mains and house service connections between two manholes are completed

before moving to another location (this will minimize the spillage of raw sewage into an open trench). The Contractor shall isolate the block where the work is in progress by plugging the upstream and downstream manholes. Should the sewerage build up to within three feet of the upstream manhole, or if directed by the S&WB, the Contractor shall pump the liquid to the downstream manhole through by-pass piping, or to a nearby catch basin only if permission is granted by the S&WB. No mains or lines shall be left open overnight; a temporary tie-in shall be made between the end of the new main and the existing, and plugs at manholes shall be removed so as to allow flow to continue until work is resumed.

Where it is necessary to connect the sewers to existing manholes, the existing short bell pieces remaining in the wall of the manhole shall be broken out and new short bell pieces inserted to the full thickness of the walls and permanently grouted (see S&WB Dwg. 6178-B6). The annular space between the pipe and the wall of the structure shall be grouted with a type three, high early strength cement, or quick setting EMBECO or similar material.

If a PVC pipe is to be connected to a manhole or other concrete or brick structure, 3M CR02 elastomeric grout and jute shall be used in place of the cement grout. Or, as an alternative, the Contractor may use a sand impregnated PVC stub, grouted with cement grout as specified above, for the manhole connection.

POINT REPAIRS

The following applies for point repairs on existing sewer mains:

The Contractor shall make point repairs to the lines at specific locations shown on the drawings and as listed in the proposal.

Point repairs shall be made by either wet or dry type and shall conform to Section XII of NASSCO (National Association of Sewer Service Companies). The Contractor shall make an excavation to expose a base "ten (10) linear feet" of main, per point repair. Any additional footage of repair beyond the ten foot minimum for each point repair, shall be approved by the Director.

The Contractor is required to have all materials and equipment on hand prior to the start of excavation so that there will be a minimum of inconvenience to the residents. All trenches must be backfilled at the end of the day.

SEWER HOUSE CONNECTIONS

Work on sewer house connections shall conform to the following:

New sewer house connections, where required, shall be six inch pipe extended from the main to the back of curb or to a point directed by the Director. Bedding and foundations required under sewer mains are not required under six (6") inch sewer house connections.

The use of saddles to connect the house service to the main will not be permitted; all such connections shall be made using wye to tee fittings.

The need for replacing these house services beyond the wye or tee connection will be determined by the Director. If the pipe beyond the wye or tee is in good condition, a tie-in will be made at the fitting (wyes, tees, etc.). If the pipe beyond the wye or tee is in poor condition, the Director and tied in to the existing house service at that point. All pipe and fittings shall be of the same material as the main, unless approved by the S&WB. The connection of any two dissimilar materials shall be accomplished by the installation of a "No-Hub" coupling, consisting of a neoprene sleeve and bushing adaptor and two stainless steel bands with Stainless Steel Screws. The coupling shall be manufactured in strict accordance with Cast Iron Soil Pipe Institute Specifications C-301, latest revision, as manufactured by Tyler Pipe Company, Mission Clay Products Corps., Fernco, or approved equal.

Where existing or proposed subsurface facilities conflict with existing sewer house connections, these same connections shall be adjusted to provide for adequate clearance in accordance with the S&WB Standard Specifications. No siphons will be permitted. Adjustment of sewer house connections shall comply with the above specifications for replacement of sewer house connections.

SANITARY SEWER MANHOLE

New sanitary sewer manholes required when installing new sewer mains or relocating existing sewer mains shall be constructed in accordance with the applicable sections of the S&WB General Specifications and S&WB Standard Dwgs. No. 6178-B6 and No. 6312-E5.

INSPECTION

At the completion of the point repair or installation of mains between manholes, and prior to final acceptance, the Board may inspect the mains with a remote control television unit. The Contractor shall assist by notifying the residents to refrain from use of these services during the inspection. The Contractor will be

required to repair at his expense and in an approved manner, all defects in his workmanship disclosed by these tests and inspections before final acceptance.

MEASUREMENT AND PAYMENT

Depth of manholes shall be measured from invert to the top of casting.

Measurement for "Manholes (6178-B6) (Sewer Manholes)" shall be per each, including excavation, granular bedding and backfilling. If the existing manhole is to be replaced, the cost shall include removal of the existing sewer manhole.

Measurement for "Sewer Point Repair up to Ten Feet" shall be per linear foot of the size and depth of pipe specified, which includes excavation, pumping, as necessary, complete shoring, foundation lumber, bedding, fittings, backfill, drainage fabric and tie-ins.

Measurement for "Sewer Point Repair beyond Ten Feet" shall be per linear foot of the size and depth specified, including excavation, foundation lumber, bedding, drainage fabric, backfill, complete shoring, pumping as necessary and tie-ins.

Measurement for "Removing and Replacing Existing Sewer House Connection from New Main to Back of Curb" shall be per each of the size specified including the installation of a wye or tee in the main, all PVC pipe, fittings, tie-ins, excavation and backfill.

Measurement for "Remove and Replace Sewer House Connection beyond Back of Curb" shall be per linear foot of the size specified including all PVC pipe, fittings, a tie-ins, excavation and backfilling.

Payment will be made at the contract unit price under:

Item 702-02-H, Manholes (6178-B6) (Sewer Manhole), per Each.

Item S-209, Sewer Point Repair up to Ten Feet, per Linear Foot.

Item S-210, Sewer Point Repair beyond Ten Feet, per Linear Foot.

Item S-211, Remove and Replace Existing Sewer House Connection from New Main to Back of Curb, per Each.

Item S-212, Remove and Replace Sewer House Connection beyond Back of Curb, per Linear Foot.

ITEMS 702-02-I, 741-01, 741-02, 741-04, 741-09, S-206 THROUGH S-208 AND S-213 THROUGH S-215, WATER MAINS UP TO 12" IN DIAMETER

Water mains shall conform to all the requirements of the General Specifications and Standard Pipes of the Sewerage & Water Board (S&WB) of New Orleans (the latest revision), except as noted.

GENERAL PROVISIONS

The Contractor shall furnish all labor, supervision, materials and equipment required for the replacement of existing water mains with new mains, including house connections, valves, manholes, hydrants, and making necessary offsets, as required.

All workmanship and materials shall conform with Section F of the General Specifications of the S&WB except as noted herein.

The Contractor shall notify the Chief of Networks of the S&WB in writing a minimum of three working days and not more than ten working days in advance of starting the job. Copies of the notice shall be sent to the Pressure Systems Superintendent.

All tie-ins to the existing water mains shall be made by the Contractor. The S&WB Forces shall assist in closing valves, witnessing the tests and chlorination of the mains. Prior to making tie-ins, the Contractor shall notify the S&WB Fire Alarm Department and residents 24 hours in advance of interruption of service.

The existing utilities shown are approximate. The Contractor shall verify the location of utilities in the fields and shall protect them from damage.

Water and sewer services which are damaged by the Contractor shall be repaired by the Board at the Contractor's expense. The Contractor can obtain a listing of the location of the house services from the S&WB. This listing is from S&WB records and the listed locations could vary from the actual locations. It is the Contractor's responsibility to verify the location of these services and to protect them from damage. Furnishing this information should not be construed as a waiver of the Contractor's liability, but rather an attempt on the part of the Board to minimize the Contractor's hazards.

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MATERIALS AND METHODS

All water mains, unless otherwise noted, shall be Class 150 Polyvinyl Chloride (PVC) pipe manufactured in accordance with AWWA C900, latest edition, and shall be U.L. listed. Pipe shall be furnished in standard lengths (min. 16 feet) with integral cast bells or couplings using elastomeric gaskets conforming with the C900 specification. Fittings shall be of cast iron conforming to ANSI A 21.10 with rubber gasketed joints conforming to A 21.11. Where fittings and valves with mechanical joints are used the bolts and nuts shall be stainless steel.

No direct tapping of the new pipe will be permitted for making house service connections. Service saddles suitable to use with PVC pipe shall be used: i.e., Clow no. 3407 (all bronze) or JQM 407 Series (stainless steel) with 2 bolts, or J. Jones J-966 (all bronze). The Contractor shall use only shell type hole cutter that will retain the coupon or chips and is designed to accommodate walls equal to pressure Class 200.

The installation of the PVC pipe shall conform with the manufacturer's recommendations and the applicable requirements of Section F of the S&WB General Specifications. The trench bottom shall be relatively smooth and free from roots, rocks, etc. The pipe shall be laid on a smooth bed of river sand six inches in depth for the full width of the trench and extending to the top of the pipe. The sand should be placed and consolidated under the pipe haunches to provide adequate side support to the pipe while avoiding displacement and misalignment. The remainder of the trench should be filled with pumped sand well compacted to the grade as required by subsection (h).

At points of tie-ins, offsets and other locations where the use of other types of pipe materials are justified, the Contractor shall furnish Class 52 ductile iron pipe with caulked lead or rubber gasketed joints, (as recommended by the pipe manufacturer). All pipe used in fittings shall be ductile iron pipe. All ductile iron pipe shall have cement mortar lining.

Offsets in water mains over or under drain lines shall be made by the Contractor with ductile iron fittings or ductile offset fittings. All ductile iron fittings shall be mechanical joint with retainer glands. All ductile iron pipe shall be wrapped with 8 mil. Polyethylene wrap conforming with S&WB General Specifications. Where offsets are made over the drain, there shall not be less than 3.5 feet of cover over the offset piping. Before the backfilling of trench, the offsets shall be subjected to an in service visual inspection in the presence of the Engineer.

Valves and hydrants shall be procured by the Contractor.

Valves shall conform to: (1) American-Darling Co's Dwg. No. 93-16039 (S&WB Dwg. No. 7091-F-2). (2) Mueller Co.'s Dwg. No. 6143 (S&WB Dwg. No. 6737-F-2). (3) U.S. Pipe and Foundry Dwg. No. 860036 (S&WB Dwg. No. 6908-F-2, for valves 2" through 8" only). Valves shall have raised pattern letters "SEWERAGE AND WATER BOARD" on the body of the valve. Valves must turn clockwise to open. For details of valve box manholes, castings, etc., see S&WB Dwg. 6179-F-2. Existing valves that are replaced or no longer needed, shall be removed and delivered to S&WB Central Yard.

Hydrants shall conform to: (1) American-Darling Co's B62B Dwg. No. 94-14106 (S&WB Dwg. No. 6868-F-2, Revised 6/77). (2) R.D. Wood's Mathews Modernized M620 Dwg. No. F24-93258 (S&WB Dwg. No. 6372-F-2). (3) U.S. Pipe and Foundry Dwg. No. 960021 (S&WB Dwg. No. 6802-F-2). For details of setting hydrants, see S&WB Dwg. No. 6179-F-2. Hydrants shall have lugs and other requirements conforming with the General Specifications. Hydrant leads shall be solid wall PVC pipe Class 150 (AWWA C900). Provided a lugged tee with tie-rods, nuts and washers at all hydrants in addition to the wood blocking. Existing hydrants that are removed shall be delivered to the S&WB Central Yard.

Backfill material shall be pumped sand and shall be placed at or near optimum moisture content and compacted according to one of the following procedures:

Backfill material shall be placed in layers not to exceed 12 inches. Each layer shall be compacted to a minimum of 95 percent of maximum density using approved mechanical compaction equipment, or:

Backfill material may be placed in layers not exceeding 3 feet by thoroughly flooding and compacting each layer to a minimum of 95 percent maximum density at or near optimum moisture content using approved mechanical compaction equipment, prior to placing a subsequent layer. During placement, backfill materials shall be thoroughly saturated with water and satisfactory drainage of materials shall be provided.

The above backfill material and compaction procedures shall be applied also for any service connections, offsets, etc.

SERVICE CONNECTIONS

All existing lead water house service connections shall be replaced with new polyethylene pipe and fittings from the main to the meter (see S&WB Dwg. No. 7134).

Existing services shall be tied into new mains using a service saddle and corporation cock. The new tap and cock shall be the same size as the existing connection, unless otherwise noted.

INSPECTION

Preliminary acceptance of the water system is contingent upon the system passing inspection. Final acceptance of the water system is contingent upon 90-day maintenance period following satisfactory testing of the system. The system shall be tested and flushed by the Contractor in the presence of the S&WB Engineer in accordance with Paragraph F-15 of the General Specifications. All air shall be bled from the house service connections prior to testing. All costs incurred, including repairs to defects shall be borne by the Contractor.

CHLORINATION

Chlorination of water mains shall be performed by S&WB in accordance with Paragraph F-16 of the General Specification after the test described in Paragraph F-15 has been successfully completed. Prior to chlorination, the Contractor shall provide and install the materials required by S&WB Dwgs. 7004-W and 7005-W, Rev. 1, and flush the mains with maximum flow through a 2.5" hose. The Contractor will be responsible for the cleanliness of the main at all times until completion of the work and final acceptance of the Contract. During construction, the Contractor shall keep the main free from dirt, trench water, debris, rodents, etc. At the end of each day's work or stoppage of work the Contractor must provide an approved temporary water tight wing nut test plug (Model A-902 Climax or equal) at each open end. When the work is resumed the trench must be free of water and dirt before the plug is removed.

The Contractor shall notify the S&WB one week in advance of the desired chlorination date. The Board Forces will require approximately four working days, weather permitting, to conduct tests and give approval and acceptance of the system. A single disinfection will provide satisfactory results if the pipe is kept clean and properly flushed prior to chlorination. If the initial disinfection does not produce satisfactory samples the process shall be repeated and the Contractor shall be assessed as indicated below.

The Board will perform the normal chlorination of the mains at no charge to the Contractor provided the system is in good, clean condition. If, during the chlorination, it is observed that Contractor has not taken proper precautionary measures to prevent contamination, the Board will cease operations until the system is flushed and made clean by the Contractor. The Contractor will be assessed the total cost to the Board for each revisit required to obtain satisfactory results.

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AS BUILT DRAWINGS

Prior to final inspection and testing of the system, the Contractor shall submit to the Board "as-built" drawings, showing any change in line or grade from the original drawings and location of house service connections as per S&WB requirements. In addition, the Contractor shall furnish a unit cost breakdown of the water system.

MEASUREMENT AND PAYMENT

Measurement of "Manholes (6179-F2) (Water Valve Manhole)" will be per each installed and accepted, including excavation, granular bedding and backfilling.

Measurement of "Water Main (8" PVC)" will be per linear foot, including main line fittings and tie-ins, excavation, removal of existing pipe (if any), pumping as necessary, bedding, complete shoring, backfilling, and tie-ins. Plugging and abandoning existing mains, and sand filling existing manholes shall be included in the price per linear foot.

Measurement of "Gate Valve (8")" will be per each installed and accepted, including excavation and backfilling. Salvaging existing valves shall be included in the price per each.

Measurement of "Fire Hydrant", will be per each installed and accepted, including excavation, backfilling, blockings, lugs, tees, and leads. Salvaging existing hydrants shall be included in the price per each.

Measurement of "Adjusting Water House Connections" will be per each installed and accepted, including excavation and backfilling. Tie-ins to existing mains shall be included in the price per each.

Measurement of "Remove Mud and Debris from Meter Box" will be per each meter box cleaned and accepted.

Measurement of "Replace Broken Water Meter Box" will be per each installed and accepted, including any adjustment to grade, cleaning and aligning

Measurement of "Adjust Water Meter Box" will be per each water meter box adjusted and accepted, including cleaning mud and debris from inside of the box.

Measurement of "Replace 5/8" and 3/4" Water House Connection (from Main to Meter)" and "Replace 1" Water House Connection (from Main to Meter)" will be

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per each installed and accepted, including excavation and backfilling. Tie-ins to existing mains shall be included in the price per each.

Measurement of "Replace ¾" or 1" Water House Connection (from Meter to Property Line)" per linear foot installed and accepted, including excavation and backfilling. Tie-ins to existing lines and meters shall be included in the price per each.

Payment will be made at the contract unit price under:

Item 702-02-I, Manholes (6179-F2) (Water Valve Manhole), per Each.

Item 741-01, Water Main (8" PVC), per Linear Foot.

Item 741-02, Gate Valve (8"), per Each.

Item 741-04, Fire Hydrant, per Each.

Item 741-09, Adjusting Water House Connections, per Each.

Item S-206, Remove Mud and Debris from Meter Box, per Each.

Item S-207, Replace Broken Water Meter Box, per Each.

Item S-208, Adjust Water Meter Box, per Each.

Item S-213, Replace 5/8" and 3/4" Water House Connection (from Main to Meter), per Each.

Item S-214, Replace 1" Water House Connection (from Main to Meter), per Each.

Item S-215, Replace 3/4" or 1" Water House Connection (from Meter to Property Line), per Linear Foot.

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ITEM S-216, PLUG EXISTING DRAINS

GENERAL PROVISIONS

This work consist of plugging existing drain lines at the structures (manholes, catch basins, drop inlets, etc.) with brick and mortar as approved by the Sewerage and Water Board.

CONSTRUCTION METHODS

The Contractor shall furnish all materials, equipment, labor, tools, etc. required to perform all work as described above, where indicated on the plans or as directed by the Project Engineer.

MEASUREMENT AND PAYMENT

Measurement of "Plug Existing Drains" will be per each plug, in place and accepted.

Payment will be made at the contract unit price under:

Item S-216, Plug Existing Drains, per Each.

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ITEM S-217, FILL DRAIN WITH MISSISSIPPI RIVER SAND

GENERAL PROVISIONS

This work consists of filling the drain lines to be abandoned in place with Mississippi River sand.

CONSTRUCTION METHODS

Install sand by pumping a stiff slurry from the upstream end of the pipe.

The volume of sand shall be determined by multiplying the cross sectional area of the pipe by the length of pipe abandoned in place. The Contractor shall furnish all materials, tools, equipment, labor etc. required to perform all work as described above.

MEASUREMENT AND PAYMENT

Measurement of "Fill Drain with Mississippi River Sand" will be per cubic yard, in place and accepted.

Payment will be made at the contract unit price under:

Item S-217, Fill Drain with Mississippi River Sand, per Cubic Yard.

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ITEMS S-301 THROUGH S-306, HORTACULTURAL REQUIREMENTS

GENERAL PROVISIONS

This work consist of removing trees, tree trimming, root pruning, root trenching and restoring existing plant and flower beds in accordance with the guidelines and requirements of the Parkway and Park Commission of New Orleans as indicated in the following specification.

The contractor shall be responsible for restoring all existing plant and flower beds, affected by construction activity, to a like or better condition than existed prior to construction. This work shall be performed under the direction of the Parkway and Park Commission of New Orleans.

The Contractor shall furnish all materials, tools, equipment, labor, etc. required to perform all work as described in this specification and/or as directed by the Project Engineer.

LANDSCAPING

GENERAL

GENERAL REQUIREMENTS

The Contract unit prices are required to cover-all work expressed or implied by the contract documents, for the purpose of promoting the health, vigor, natural habitat, and symmetry of the plant materials.

SCOPE OF WORK

The scope or extent of work required under this specification consists of all landscaping work and furnishing all related items necessary to complete the work described in this specification and/or indicated on the project drawings. This includes, but is not limited to the following items, depending on the scope of the specific project:

- | | |
|------------------------------|------------------------------|
| 1. Fine or Finish Grading | 7. Tree Protection |
| 2. Seeding or Sodding | 8. Tree Barricading |
| 3. Bed Preparation | 9. Tree & Shrub Relocation |
| 4. Ground Cover Installation | 10. Maintenance & Guarantees |
| 5. Shrub Installation | 11. Bonding |
| 6. Tree Installation | |

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QUALITY ASSURANCE

QUALIFICATIONS:

The qualifications and responsibilities of the Contractor are as follows:

The Contractor or Subcontractor shall have at least five (5) years experience as a Landscape Contractor and shall be required to perform the work specified in the drawings and specifications.

Each contractor, subcontractor, and sub-contractor shall comply with Louisiana Licensing Laws for Contractors, LA. R.S. 37:2151 et. seq., as applicable. "Contractor shall have a current and valid Louisiana Landscape Contracting License as issued by the Louisiana State Horticultural Commission." All Landscape Contractors shall also have appropriate experience related to the work specified herein. The Contractor shall provide proof of qualifications, including his Landscape Contracting License.

The Contractor shall fully and satisfactorily maintain and protect all work performed under this contract until completion and acceptance of the work or portions thereof and shall repair or replace at his own expense any work related damage during that period to the satisfaction of the Parkway and Parks Commission Landscape Architect.

All portions of the property including work resulting from other contracts which have been disturbed by causes due to, or incidental to work performed under this contract, shall be repaired and restored. to the satisfaction of the Parkway and Park Commission Landscape Architect.

Pavements and all other work installed under other contracts shall be kept clean of soil, straw, mulch and other materials incidental to work of this contract. Materials and equipment shall be stored where directed and shall be limited to the quantity required for the work. Rejected materials shall be immediately removed from the property.

Seasonal Limitations - Planting and seeding shall be done whenever soil and weather conditions permit. This shall be determined by the Parkway and Park Commission Landscape Architect.

The Contractor shall be responsible for providing all necessary equipment, materials, and labor to complete the project.

Personnel shall meet the following qualifications:

The Contractor shall provide at least one person who shall be present at all times during execution of this portion of the project. This person shall be thoroughly trained and experienced in placing the plants specified and shall be knowledgeable of plant

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material names, both common and scientific. This person shall also have experience directing all work performed under this section.

STANDARDS:

The Contractor must meet all requirements and recommendations of the applicable portions of the latest edition of the Standards listed below:

United States Department of Agriculture (USDA)

Federal Seed Act. (FSA)

American Association of Nurserymen's - American Standard for Nursery stock.

TREE PROTECTION

GENERAL

REQUIREMENTS AND RESPONSIBILITIES:

The Contractor shall satisfy the following requirements and responsibilities:

The Contractor shall be responsible for damage to all trees and plant materials and liable to the Parkway and Park Commission and the City of New Orleans, for compensation or replacements as determined by the Parkway and Park Commission Tree Department or the Landscape Architect.

The Contractor shall provide a Louisiana Licensed Arborist to perform the necessary tree trimming, root pruning, or removal of any tree or stump on City property. A current list of licensed arborist's may be obtained from:

Parkway and Park Commission
Tree Department
2829 Gentilly Boulevard
New Orleans, Louisiana 70122
Phone: 504.286.2123 or 286.2100
Fax: 504.286.2158

The contractor shall submit a bond for the value of the existing trees, as determined by the Parkway and Park Commission Tree Department prior to beginning construction. The bond will be for a minimum of three (3) years. At the end of three (3) years the tree will be inspected by the Parkway and Park Commission Tree Department. If the trees are showing signs of stress due to construction the Parkway and Park Commission shall require another bond for an additional two (2) years. At the end of this period a final inspection will be made. If the trees are

not dead or showing signs of severe stress the contractor will be released of all responsibility. If the tree is dead or under severe stress the contractor shall be responsible for the value of the tree.

If a construction plan specifies the removal of City owned trees or plant material and the Parkway and Park Commission agrees to the removal, the owner, contractor or agency authorizing the work shall compensate the Parkway Commission prior to beginning construction.

If a construction plan does not specify the removal of a tree or plant material but it is found that trees or plant materials must be removed to complete a project and the Parkway and Park Commission agrees to the removal, the trees or plant materials shall be transplanted to an adjacent location if possible. If it is not possible to transplant these plant materials, but it is necessary to remove these materials, the Parkway and Park Commission shall be compensated for these removed plant materials. Replacement shall be at the minimum rate of two (2) for every one (1) plant removed. The maximum number of replacements will be determined by the value of each removed plant material. It is the Contractor's responsibility to notify the Consultant and the owner of any discrepancy in the plans, before any excavation begins.

The contractor shall be responsible for hiring a licensed Louisiana Arborist to perform work on City trees; i.e., root pruning, tree trimming, tree removal or fertilization. Under no circumstances may anyone other than a licensed Arborist work on City trees.

The licensed Arborist must obtain a permit from the Parkway and Park Commission Tree Department prior to working on City trees. The work will be supervised by the Tree Department.

The Contractor must identify those trees which will require trimming to clear for construction and have the trees trimmed prior to beginning construction.

The contractor shall be responsible for hiring a licensed Arborist to repair any damage done to trees or plant material caused by construction before the Parkway and Park Commission will assume final acceptance of the job.

The attachment of signs, barricades, equipment or materials in any manner to any tree is prohibited.

No track vehicle or heavy equipment will be allowed to work within the driplines of trees or plant materials.

No materials or equipment shall be stored within the driplines of trees or plant materials.

No equipment may be cleaned or repaired under the driplines of trees or plant material.

Grade changes, either excavating or filling shall not exceed 2" within the driplines of the trees.

The Parkway and Park Commission may require the erection of barricades around the perimeter of tree driplines. The Contractor is responsible for maintaining the temporary barricades until completion of the project. The minimum barricade requirements shall be one of the following:

2' x 4' wood posts, 7' in length, 3' in ground, set 4' on center with nylon rope secured to the top of the posts, running post to post completely encircling the tree, with yellow plastic caution tape tied around the rope at each point.

Green painted steel posts with at least 4' above ground, 3' in ground, set no more than 6' on center with orange plastic safety fencing attached from top to bottom running post to post completely encircling the tree.

Excavation within the dripline of any City trees is permitted only under existing road beds. All other excavation (i.e., street widening, neutral grounds, or sidewalks) within the dripline of any City trees shall be inspected by the Parkway and Park Commission, Tree Department, prior to beginning construction.

Trenching within the dripline of any City tree is not permitted. Boring or hydraulic jacking is acceptable within the dripline if performed according to the following specifications. The boring or jacking must be initiated at a minimum depth of 30" and 10' from the dripline of the tree, and the location of the boring must be directly under the center of the tree's main stem. Placement of boring pits and direction of the boring must be approved by the Parkway and Park Commission, Tree Department prior to beginning of construction. Under unusual conditions, the Parkway and Park Commission may approve alternative methods.

Where tree roots interfere with placement of new curbs, Contractor shall delete the typical 1' base course extension for placement of new curbs within the dripline of any City-owned tree. An on-site inspection by the Parkway and Park Commission, the Contractor, and the Contractor's licensed arborist shall be required prior to excavating for the new curb to determine the extent of root pruning necessary for construction clearance. Curbs within the dripline of City trees shall be hand-formed.

Where the tree encroaches on the street, the curb shall be blocked out in accordance with the plan details. There shall be no direct pay for curb blockouts. The curb shall be measured through the blockout and paid for under at the contract unit price for curb.

Where tree roots interfere with placement of new sidewalk, wherever possible ramp over roots using a minimum 4" gravel bed and filter cloth between the gravel bed and the new concrete. If ramping is not an option, an on-site inspection by the Parkway

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and Park Commission, the Contractor, and the Contractor's licensed arborist shall be required prior to excavating for the new sidewalk to determine the extent of root pruning necessary for construction clearance. Do not place expansion joints over roots; instead the Contractor shall use control joints.

No more than 2" of cut or fill is permitted within the dripline of any tree.

Failure to comply with these specifications may result in the Parkway and Park Commission requesting that the Contractor stop work at the jobsite.

The Parkway and Park Commission Tree Department or Landscape Architect must be notified three (3) working days in advance of the beginning of excavation on the jobsite, and for meetings to resolve problems unforeseen on the jobsite.

MAINTENANCE OF NEUTRAL GROUNDS, PARKS AND OTHER CITY GREENSPACE

GENERAL

REQUIREMENTS AND RESPONSIBILITIES:

The Contractor shall satisfy the following requirements and responsibilities:

The Contractor assumes all responsibility of the project area's maintenance; from the commencement of construction through the construction period, and substantial completion, until acceptance by the City of New Orleans and the Parkway and Park Commission after the final inspection. The contractor shall mow the grass when necessary. The Contractor shall not allow the grass to grow above the maximum acceptable height of 8 inches.

The Parkway and Park Commission recognizes the importance of the improvement projects within the neutral grounds and public rights-of-way of the City. However, it is the responsibility of the Parkway and Park Commission to maintain the neutral grounds and public rights-of-way in an attractive manner. Therefore the Parkway and Park Commission must require Contractors to fulfill all of the duties of the Parkway Commission during construction.

The City Code cites several violations for parking, driving and/or storage of materials and equipment on neutral grounds and public rights-of-way which are subject to fines. Storage of equipment and materials shall take place in the adjacent roadway. The Contractor shall work with the State and the Department of Public Works Traffic Engineering Division, and Parking Control. During construction, it may sometimes become necessary to waive violations with permission from the Parkway and Park Commission. This can be accomplished by directing a letter requesting to the Superintendent, of the Parkway and Park Commission. The Contractor must state the reasons why he must use the neutral ground and each location must be shown in

plan. The Contractor is cautioned to minimize during construction, the occupied spaces, and the damage to the neutral ground or public right-of-way.

The Contractor is responsible for restoring the neutral ground to a like or better condition than existed prior to construction. All areas disturbed during construction shall be regarded to a smooth even surface, eliminating ruts and holes. All obstructions such as bricks, concrete, wire, cable, wood, metal, gravel, and other debris must be removed. Only pumped sand, or a mixture of 70 percent pumped sand and 30 percent peat moss, may be used to backfill low areas to complete grading, not spillway or batture sand. Restoration of turf grass shall be accomplished as per this specification.

The Contractor is responsible for the maintenance of turf grass and other plant material on neutral grounds within the construction area.

Maintenance shall commence when construction begins or when any supplies, equipment, signs, barricades, or other materials related to the construction are placed on the neutral ground, whichever occurs first; and continue until Final Acceptance.

Maintenance shall primarily include mowing, with grass to be maintained no higher than 8" at anytime.

Under certain rare circumstances, if newly planted trees or shrubs or other existing plantings requiring maintenance during construction, are inaccessible to Parkway and Park Commission maintenance personnel and equipment for watering, weeding, trimming or other maintenance, the Contractor may be required to perform such maintenance during construction.

The Contractor shall be responsible for damage to any City-owned shrub on the neutral ground or other greenspace within the construction area and liable to the Parkway and Park Commission for compensation of damage as determined by the Parkway and Park Commission.

No shrub may be removed from public greenspace without the approval of the Parkway and Park Commission. Compensation for removing shrubs may be a condition of the approval.

INSTALLATION OF NEW UTILITY LINES INVOLVING BORING UNDER TREES

GENERAL

REQUIREMENTS AND RESPONSIBILITIES:

The Contractor shall satisfy the following requirements and responsibilities:

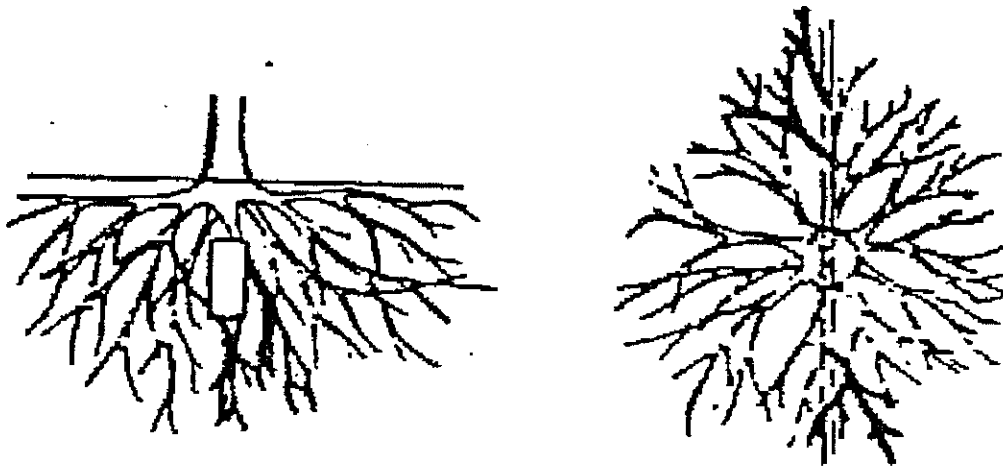
If the installation of new utility lines or the replacement of old utility lines is to take place within the dripline of any existing trees or shrubs, no trenching is to be allowed. Only Hydraulic Jacking (Boring) or hand digging is allowed within the plant material's driplines.

The Contractor must notify the Parkway and Park Commission Urban Forester or Landscape Architect at least 3 working days in advance of and prior to any utility line construction within the barricade(s), and within the tree(s) dripline(s), at 283-8333.

If possible, confine the location of underground utilities to areas away from tree roots. There may be exceptions. When it is necessary to pass close to a tree, corridors must be tunneled under major roots rather than using trenches. Corridors or tunnels must be bored under the center of the tree. Boring may not begin closer than 10' from the trunk of the tree. Boring this close to a tree, within a tree's dripline, shall only be permitted under extremely confined urban situations for distances and depths of boring as may be permitted. All final decisions on distances and depths shall be made by the Parkway and Park Commission's Urban Forester/Tree Preservationist. In all locations where it is obvious and possible, boring shall begin 1' outside of the tree's dripline and end on the opposite side of the tree 1' outside of the tree's dripline or canopy. The depth of all boring shall be a minimum of 30". See Figures 1 and 2. These drawings are not to scale.

FIGURE 1 - Right Utility Placement:

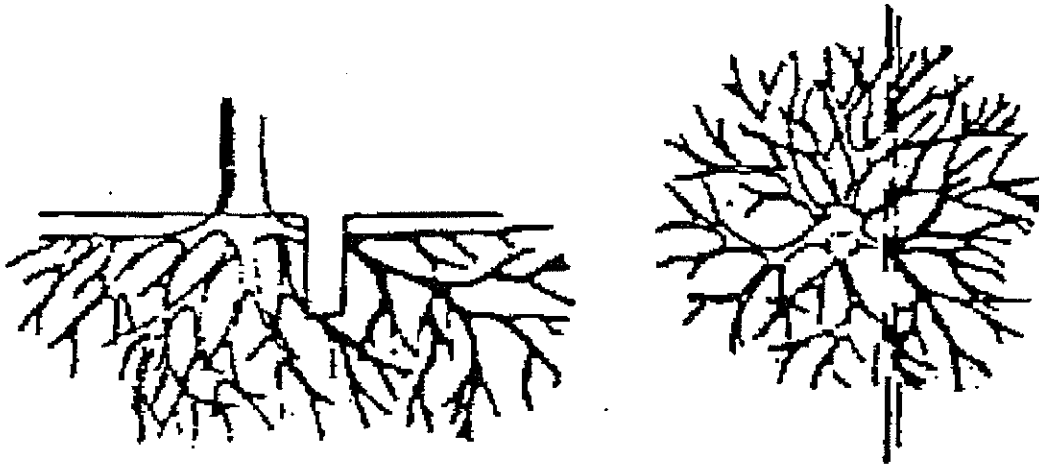
Only a few roots are destroyed by tunneling under the base of the tree.



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FIGURE 2 - Wrong Utility Placement:

The Parkway and Park Commission Tree Division must be contacted at least 3 working days prior to boring under any City tree, to avoid wrong utility placement as shown in Figure 2.



If it becomes necessary to contact the Parkway and Park Commission Tree Division after normal working hours, on weekends or holidays the "Tree Emergency" number is 282-2935 or 2936 which is monitored 24 hours a day, 7 days a week. This "Emergency Number" is not to be used for an inspection of a tree that is to be worked around or under during normal working hours. See the section on Tree Protection for details.

BONDING

REQUIREMENTS AND RESPONSIBILITIES:

The Contractor shall satisfy the following requirements and responsibilities:

The Parkway and Park Commission shall require the General Contractor to post a bond for the value of trees and shrubs, and for the restoration of the turf within the limits of the construction area. Turf Restoration shall be required when damage of any kind due to adjacent construction occurs, during the period the site is under contract. The Parkway Commission Landscape Architect shall determine when restoration of turf is needed. See Seeding & Sodding. The value of trees and shrubs shall be determined by the Parkway and Park Commission Urban Forester, by the appropriate formula contained in the "Guide for Establishing Values of Trees and Other Plants" prepared by the Council of Tree and Landscape Appraisers, and published by International Society of Arboriculture, P.O. Box 71, Urbana, Illinois 61801. Bonding of trees shall be for a minimum of three (3) years. At the end of three (3) years the tree(s) will be inspected by the Parkway Commission

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Urban Forester/Tree Preservationist. If any tree is still showing the stress of construction work the Urban Forester shall require another bond on the tree for an additional two (2) years. Near the end of this five (5) year period a final inspection shall be made. If the tree is not dead or under severe stress the Contractor will be relieved of all responsibility. If the tree is dead or under severe stress the Contractor or his bonding company shall be responsible for monetary compensation to the Parkway and Park Commission through the Plant-A-Tree Fund, based upon the previously established value of the tree.

Shrubbery, ground cover, and turf shall be bonded for a minimum of one (1) year. If the contract extends past one (1) year, the Contractor shall be required to extend the bond for the duration of the contract. This shall be determined by the Landscape Architect, and can be requested of the Contractor before construction begins, or during construction. The area to be bonded within or adjacent to the construction project limit of work lines will depend on the severity of the impact of construction on these areas that were to remain undisturbed.

If the plant material has been removed or damaged beyond the point of being salvaged, the Contractor shall be responsible for the cost of compensation or replacement. If the plant material has not been removed and cannot be salvaged, the Contractor shall be responsible for removal of the damaged plant material with the Parkway Commission approval. The cost of replacement or compensation of the removed plant material shall be reimbursed to the Parkway Commission prior to the final inspection as per this specification.

See "PLANT GUARANTEE AND MAINTENANCE PERIOD."

See "REPAIR AND REPLACEMENT OF TREES AND SHRUBS."

REMOVAL AND INSTALLATION OF TREES AND SHRUBS

REMOVAL OF TREES AND SHRUBS

GENERAL REQUIREMENTS:

All shrubs, trees, and ground covers in the way of new construction are to be removed and reinstalled in accordance with the following Specification.

Contractor shall visit the site prior to bidding to determine sizes and conditions existing prior to removal and reinstallation.

All work will be supervised by the Landscape Architectural Consultant and/or the Parkway and Park Commission Landscape Architect or his assistant. Contractor shall notify the Landscape Architectural Consultant or the Parkway and Park Commission

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Landscape Architect at (504) 283-8333 at least 3 working days before this work commences. The scope of the work shall determine the type of supervision.

The Contractor is responsible for ensuring that all trees and shrubs are planted according to locally accepted standard horticultural practices, including planting hole preparation, soil backfill, fertilizer, mulch, watering, staking and guying. (See Tree Planting Detail)

The Contractor is responsible for maintenance of any new or relocated trees and shrubs from the time of planting until Final Acceptance of the project.

Maintenance shall include all necessary watering, fertilizing, weeding, pruning, disease and insect control, straightening and adjustment, replacement of dead or unhealthy plants, and other procedures consistent with good horticultural practices which are necessary to insure normal, vigorous and healthy growth of the plant material.

SCOPE OF WORK:

The following is a list of items that shall be required under this project, but not limited to these items but also included are all the items necessary to complete this project in the proper horticultural manner.

1. Removal of Trees and Shrubs
2. Relocation of Plant Materials
3. Installation of The Plant Materials New and Existing
4. Staking and Guying
5. Fertilizing
6. Pruning
7. Mulching

PRODUCTS:

The following list of materials shall be required under this section to complete all work described in these specifications and/or indicated on the project drawing. This includes, but is not limited to the following items and all related items necessary to complete this project:

1. Planting Soil Mixture
2. Root Stimulant
3. Stakes and Guy Wires
4. Fertilizer
5. Mulch
6. Anti-desiccant

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Planting Soil Mixture

Topsoil is to be an approved spillway or batture sand containing no less than 15 percent clay with a PH range from 5-7. It should be fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps brush, weeds, and other litter, free of roots stumps, stones larger than 2" and any other extraneous or toxic matter harmful to plant growth.

Peat Humus is decomposed peat with no identifiable fibers and with a ph range suitable for intended use.

Organic mulch shall be free from deleterious materials and suitable for top dressing of trees, shrubs, or other plants, and consisting of one of the following:

- Shredded Cypress Bark
- Shredded Pine Bark
- Decomposed Wood Chips that can be mixed with soil in planting pit.

Root Stimulant may be any commercially available brand to be approved by the Landscape Architect.

Staking and Guying will be used to stabilize a tree or large shrub in its new location.

Commercial Fertilizer shall be a complete fertilizer of neutral character, with some elements derived from organic sources and containing following percentages of available plant nutrients:

For trees and shrubs, Osomocote 18-6-12 to nine (9) month formulation (Sierra Chemical Corporation), or an approved equal.

Anti-desiccant may be any commercially available brand to be approved for use by the Landscape Architect.

EXECUTION:

Removal from the construction site of trees or shrubs to be relocated shall be accomplished by the use of an appropriately sized tree spade. For trees, the tree spade must be adequate to obtain a minimum of 1' of root ball diameter for each 1" of tree caliper measured 1' off the ground.

Burlap and wire mesh basket shall be used to support each tree and its roots and to keep the soil around the roots moist.

After each tree is securely balled, pruning will begin. See Pruning, section of this specification for details on pruning. After pruning an anti-desiccant shall be sprayed on foliage.

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INSTALLATION OF SHRUBS AND TREES

GENERAL REQUIREMENTS:

All locations of pits for shrubs and trees to be transplanted into, from construction site, shall be staked before installation is to take place. Staking shall be done and locations determined by either the Parkway and Park Commission Landscape Architect or the Horticulturist.

All root balls shall be sprayed with a root stimulant prior to planting.

Insofar as is practical plant materials shall be planted on the day of delivery. In the event this is not possible, the Contractor shall protect that stock not planted. Protect plants from sun or drying winds. Plants that cannot be planted immediately on delivery shall be kept in the shade, well watered and protected. Plants shall not remain unplanted for longer than three days after delivery. All plants shall be lifted and handled from the bottom of the ball only. Plants moved with a ball will not be accepted if the ball is cracked or broken before or during planting operations.

Tree pits shall be dug by a backhoe.

Rake surface clear of stones, debris, rubbish, and trash before pit excavation. Dispose of such material away from the Site.

Any excess soil remaining from the tree pits, not needed to backfill around planting soil mixture or required for use around the tree root balls, shall be stockpiled in each area for later use by the Parkway Commission.

After tree ball is placed in pit, there shall be a minimum of 12" of planting soil on the bottom and all sides as shown on planting detail. (6" for shrubs.) The plant shall be placed so that after final settlement, they will stand at approximately the same elevation as in the field or nursery. As planting soil is backfilled, it shall be placed in layers and tamped in place carefully so that no damage will occur to ball in any manner, or disturb the position of the ball. B. & B. (Balled & Burlapped) plants shall have the burlap cut away or folded back from the top of the ball before applying water and fertilizer.

Fertilizer shall be applied at a rate of 2 pounds/inch of caliper for small trees.

STAKING AND GUYING:

Trees shall be supported immediately after planting as specified and on attached sketch. Staking of trees shall be done immediately after planting. Trees shall stand plumb after staking and guying.

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The wires shall be encased in hose to prevent direct contact with bark of the tree and shall be placed around the trunk in a single loop. Wires shall be tightened and kept taut by twisting the strands together, or with turn buckles.

PRUNING:

General:

Each tree and shrub shall be pruned in accordance with standard horticultural practice to preserve natural character of plant.

All injured tree and shrub roots shall be pruned to make clean cut ends before planting.

The tops of deciduous trees shall be pruned before planting, but only under the supervision of the Landscape Architect, Forester, or Horticulturist. Main leaders of trees will not be cut back. Thin branches out and do not merely cut back. Long side branches, however, may be shortened. Shrubbery with extremely heavy tops shall have one-fourth to one-third of the weaker growth removed.

Pruning Requirements:

The Contractor shall meet the following requirements:

Contractor shall engage a qualified License Arborist with appropriate insurance to prune trees, under Urban Forester's supervision, to lessen shock from transplanting.

The contractor shall notify the Urban Forester's office whenever trees or roots need to be pruned prior to beginning construction. All pruning is to be done under the supervision of the Urban Forester.

Where directed by Architect, extend pruning operations to restore natural shape of entire tree.

If required, cut branches and roots with sharp pruning instruments; do not break or chop.

No heavily pruned material will be accepted at any time. Only material pruned under Parkway and Park Commission Landscape Architect's, Urban Forester's, or Horticulturist's supervision will be accepted. If the natural form is destroyed, the plant will be rejected.

The trees or roots shall be pruned in accordance with generally accepted arboricultural practices.

Excavation of roots that need to be pruned must be done by hand within the dripline of the tree.

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FERTILIZER:

General:

All fertilizer shall be a commercial balanced formula with at least 25 percent organic material, and shall conform to applicable State fertilizer laws. It shall be a slow release formula, with product name "Osmocote," or equal, and shall be used as specified by manufacturer. Fertilizer, unless otherwise specified, shall be delivered mixed as specified, in standard size, unopened containers, showing weight, analysis, and name of manufacturer.

Special Protection:

If stored at the site, it shall be kept in a weatherproof place and in such a manner that it will be dry and its effectiveness unimpaired.

Fertilization for existing trees near the construction site but not relocated shall be as follows:

Trees that are not to be relocated shall be fertilized using a water soluble fertilizer injected into the soil in solution under pressure. The nutrient complex and ratio gal/sq. ft. must be approved by the Urban Forester/Tree Preservationist

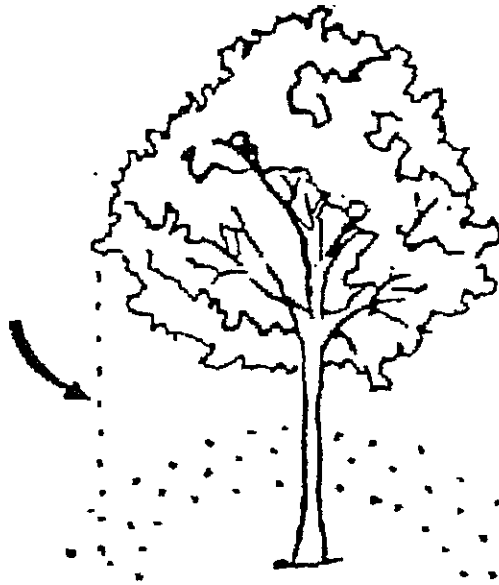
If a fall application is required, a fertilizer containing little or no nitrogen must be used. This, of course, is done to stimulate root growth as opposed to foliar growth.

Other methods of fertilizer application (such as injection, broadcast or foliar spray) may be used if approved and agreed upon beforehand by the Commission's Urban Forester.

Trees that have had roots pruned must be treated with a root stimulating hormone.

SOIL AERATION:

To aerate properly, a method of breaking up the soil compaction without excessive root damage must be used. There are various types of mechanical pluggers or spikers which improve soil aeration and water percolation, as well. A drill with a 1-1/2" diameter bit, a shovel or a commercial soil auger, such as "AER-CORE", can be used to penetrate the soil to a depth of 8-10". These holes should be evenly distributed 2' apart starting at a distance midway between the trunk of the tree and the dripline of the tree and cut just beyond the dripline of the tree. The holes should be placed in a donut shape around the trunk. See diagram.



MULCH:

Shredded pine bark mulch spread in designated areas in a two inch (2") minimum layer.

TREE STAKING:

Tree Stakes:

Three 2-½" - 3" diameter fence posts, penta-treated for each tree, 7' - 0" long; stakes shall not penetrate the ball of earth moved with the tree. Stakes shall penetrate existing soil below tree pit.

Guy Wire:

Galvanized malleable iron wire No. 12 gauge double strand.

Hose:

Two-ply reinforced black neoprene hose at least ¾" in diameter.

Installation:

See planting detail at the end of this section.

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PLANTING SOIL:

General:

This shall be a fertile, friable soil typical of the locality. It shall be well drained and have a "ph" factor between 5 and 7.0 without mixture of subsoil. It shall be clean and free of clay lumps, stones, roots and deleterious substances two inches or more in diameter. It shall be a mixture of the following materials in quantities specified: one part humus, one part coarse building sand, one part batture sand, and one part shredded bark mulch.

This mixture shall be used as the backfill for all trees, shrubs, ground- cover, and plant materials other than grass.

Testing:

The Contractor shall test planting soil for conformance with standard Horticultural requirements, and shall furnish architect with written evidence of soil analysis.

The Owner shall select the testing laboratory.

The Contractor shall have the testing laboratory analyze the composition of the soil, the ph factor, and the mineral content. The Contractor shall supply the Testing Laboratory with the complete planting list, for use with the analysis. The analysis shall be done after all debris and trash have been removed, and the planting soil is mixed thoroughly into the existing soil to a minimum depth of 6". The testing will be done to see what is lacking and needs to be added to the soil, if anything, before any planting takes place.

CLEAN-UP:

General:

The Contractor shall, periodically or as directed during the progress of the work, remove and properly dispose of debris, rubbish, trash, clippings, prunings, and defective or unacceptable materials. The Contractor shall continuously keep the project clear of hazardous obstructions.

Trash burning on the site will not be permitted.

Prior to Substantial Completion, all tools, surplus materials, equipment, trash, and debris shall be removed and the Site left in a neat, clean condition.

Paved areas shall be kept clean of soil, fertilizer, mulch, trash and debris, and shall be maintained in a broom clean condition at all times. Mud and soil tracked onto paved areas by equipment and workmen shall be removed promptly and completely.

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Protection of Lawn Area's and Restoration of Site: Contractor shall take special precautions to see the lawn areas are not damaged during construction. The Contractor shall fill and reseed any areas damaged during his operation.

PLANT GUARANTEE AND MAINTENANCE PERIOD

GENERAL

CONTRACTOR'S MAINTANANCE:

Contractor's responsibility to plant maintenance shall commence when work is begun and continue through Owner's acceptance of Substantial Completion and the maintenance program, established herein, is begun.

Maintenance shall include all necessary watering, cultivating, fertilizing, weeding, pruning, would dressing, disease and insect control, protective spraying, replacement of any plants which settle or are planted too low, and other procedures consistent with good horticultural practices which are necessary to insure normal, vigorous and healthy growth of all work under this contract.

In the event that treatment or replacement is made necessary as a result of damage caused by circumstances which are beyond the Contractor's control, and not due wholly or partially as a result of any act or omission of the Contractor, such treatment or replacement may be authorized by the Owner by Change Order in accordance with the General Conditions.

CONTRACTOR'S GUARANTEE PERIOD:

All planting work shall have guaranteed maintenance through Substantial Completion and its subsequent Final Acceptance by the Owner. After Final Acceptance the one (1) year guarantee period of all contractual work begins. The Contractor or his subcontracting Landscape Contractor is to maintain the plant materials for that year of 120 days after the last installation of replacement plants, or 120 days after those replacements are installed, whichever is longer.

Inspection of the work to determine its completion will be made by the Owner and Landscape Architect upon written notice requesting such inspection submitted by the Contractor at least ten (10) days prior to anticipated date. After inspection and acceptance of Substantial Completion, the Contractor will be notified of the date that the work has been approved, if there are any deficiencies of the requirements for work to remedy deficiencies to obtain final approval.

After Final Acceptance, the Contractor is responsible for maintenance, of all plant material, including replacement plant materials.

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To insure proper inspection of plant materials by the Contractor and proper maintenance relative to the appearance and survival of the plants during the period of construction, the Contractor shall inspect his planting according to the following schedule:

- at least once a week for the first month,
- at least once every two weeks for the next two months,
- and at least once a month for the remainder of the construction period, and the guarantee period after Final Acceptance.

Within twenty-four hours after each such inspection, the Contractor shall submit to the Parkway and Park Commission Landscape Architect a written report describing his findings as to condition of the plantings and compliance with the recommended care and maintenance program. A copy shall be submitted to the Owner at the same time.

The Guarantee Period shall be one full year after the date of Final Acceptance. The Final Acceptance shall be the final review and completion of all punch list items. The Guarantee Period ends officially with a final inspection by the Contractor and/or his subcontractor Landscape Contractor, the Owner, (the City) represented by the Parkway and Park Commission Landscape Architect and the User Agency, and the City's Consultant upon the Owner's request. All replacements and repairs shall be completed no later than that day before the final inspection. The 120 day maintenance and guarantee period then applies to those replacements.

REPAIR AND REPLACEMENT OF TREES AND SHRUBS

GENERAL

The Contractor shall replace, in accordance with the drawings and specifications and throughout the guarantee period, any plants that die, or in the opinion of the Landscape Architect or Owner are in an unhealthy or unsightly condition due to dead branches, excessive pruning, inadequate or improper maintenance, or any other causes due to the Contractor's negligence. The Contractor shall not be held responsible for acts of vandalism occurring after the beginning of the one (1) year guarantee period.

Engage a qualified Licensed Arborist to perform tree repair work. Repair trees damaged by construction operations, in a manner acceptable to the Urban Forester. Make repairs promptly after damage to trees. Remove and replace dead trees and damaged trees which are determined by the tree surgeon to be incapable of restoration to normal growth pattern.

Replacements shall be made during the first planting season following the death of plants. The cost of such replacements shall be borne by the Contractor. Replaced plant materials will be guaranteed for a minimum of 120 days or till the end of the guarantee period whichever is longer.

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If requested by the Landscape Architect, or Horticulturist, the Contractor shall remove any dead plant materials in advance of planting season for replacement (to avoid the unsightliness of dead material for extended periods of time).

Costs in connection with periodic inspections, as specified above, shall be included in the Contractor's Base Bid proposal and the Contract Lump Sum. Lump Sum amount stipulated shall be withheld from all monies due to Contractor under Progress Payments and shall be paid to the Contractor by the Owner only after final acceptance of the entire project.

SEEDING

GENERAL

All areas of public greenspace where turf grass has been damaged during construction shall be reseeded by the Contractor. The plans shall designate the limits of seeding and fertilizing.

MATERIALS

Materials to be used shall include:

Soil: Soil required for preparation of seed bed shall be Mississippi River Batture Sand.

Seed: Grass seed (March through September) shall be hulled Bermuda Grass with minimum 82 percent by weight of pure live seed and maximum 1 percent by weight weed seed.

Grass seed (September through March) shall be 50 percent Turf Type, Tall Fescue (variety "Jaguar") and 50 percent non-hulled Bermuda Seed. Fescue shall have minimum 82 percent by weight pure live seed and maximum 1 percent by weight weed seed.

Sod: Common Bermuda. If sod is laid between September 15 and March 31, the Contractor shall overseed the sod with Fescue seed, as otherwise indicated in this Section.

Fertilizer: Fertilizer shall be a complete fertilizer with an analysis of 8-8-8, 13-13-13, or equal approved by the Parkway and Park Commission.

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PREPARATION AND INSTALLATION

Installation shall be as follows:

Prior to seeding, the bed shall be prepared by breaking, disking, harrowing, blading, dragging or other approved methods. The soil shall be thoroughly pulverized to a minimum depth of 4" and smoothed by means of raking or other approved method. This requirement may be waived if 3" or 4" of Mississippi River Batture sand is used for dressing. Each area then shall be rolled with a light roller and then finely raked. The finished surface shall be smooth, finely textured and free from sticks and debris.

Fertilizer shall be distributed evenly, by mechanical spreader, over all areas to be seeded. The rate of application shall be 20 pounds per 1,000 square feet, as per manufacturer's specifications.

Grass seed shall be applied at the rate of 10 pounds each of the specified seed types per 1,000 square feet of seed bed by means of an approved mechanical seed spreader, which will provide a depth of 1/8" to 1/4", or rake seed into soil.

Sod shall be installed to cover all exposed bare areas, with tight even seams. Sod shall be rolled after installation to ensure complete contact with the soil.

Water seed immediately after installation. Watering shall be done in a manner to prevent erosion of soil or seed.

MAINTENANCE AND PROTECTION

The Contractor shall provide the following maintenance and protection:

Rainfall is usually not adequate to keep newly seeded or sodded turf grasses alive and healthy, supplemental watering is required.

Refill, reseed and refertilize, all bare areas as necessary to achieve complete coverage with a satisfactory stand of grass no gaps larger than four inches (4") square.

At least three (3) mowings shall be completed before the turf will be accepted. At the time of the first cutting, mower blades should be set at 2-1/2" high. Inform the Parkway and Park Commission Landscape Architect at time of each mowing.

The seeded areas shall be protected against traffic by placing warning signs, protective fencing, or other means as may be required until turf is established and accepted by the Parkway and Park Commission.

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SODDING

GENERAL

This work consists of furnishing, hauling, planting, rolling, watering and maintaining live grass sod at locations shown on the plans or as directed.

MATERIALS

Materials shall meet the following requirements:

Approved sod shall be either field grown grass or nursery grown grass.

Field grown grass sod shall be Bermuda grass, carpet grass or other approved grass native to sodded area.

Nursery grown grass sod shall be centipede, Tiffway Bermuda, Normow Bermuda, Common Bermuda or St. Augustine grass.

Fertilizer shall be complete fertilizer with an analysis of 8-8-8, 13-13-13 or equal approved by the Parkway and Park Commission.

Sod shall be free from noxious weeds or other vegetation.

Water may be obtained from any source. Brackish, chemically contaminated, or oily water shall not be used.

GENERAL CONSTRUCTION REQUIREMENTS

Sod shall be cut with approved sod cutters. The designated area shall be mowed when necessary. Sod shall be cut to a minimum soil depth of 1-½" for field grown grass and 1" for nursery grown grass, and to a uniform width and in convenient lengths for handling. Soil shall be retained on roots of sod during excavating, hauling and planting. Only common Bermuda slab sod shall be used within 30' of the outer edges of paved shoulders. Sod cut more than 48 hours before placing shall not be used unless authorized. Sod taken from areas that may produce inferior growth will not be accepted.

HANDLING SOD

Sod shall be placed flat, grass side up on boards of convenient lengths and hauled to planting site with soil intact. Only one layer of sod shall be placed on each board. Boards shall be of sufficient thickness to prevent excessive bending and of sufficient width to prevent sod from hanging over the edges.

Stacked sod shall be kept moist and satisfactorily protected from the elements.

**STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS**

PLANTING

Areas to receive sod shall be pulverized to a depth of at least 3", graded and cleared of weeds, grass, stones and other debris. If an item for agricultural lime is included in the contract, liming shall be done when the area is being pulverized. When an item for fertilizer is included in the contract, approximately 90 percent shall be broadcast over the area to receive sodding, and the remaining 10 percent shall be broadcast over sod after placing and rolling. Upon delivery to the planting site, sod shall be transferred onto the surface soil. Areas to be sodded shall be watered as directed. Sod shall be placed with minimum space between slabs. Slabs which do not fit closely shall be pulled together with suitable tools and pegged when necessary. When directed, sod surface will be top dressed with sand to smooth-out uneven spots.

ROLLING

Sod shall be rolled after planting with smooth drum steel rollers or cultipackers. Where rolling is impractical, sod shall be tamped by approved hand methods.

WATERING

Sodding shall be watered as directed. Sod in rest areas and multiple use areas shall be kept moist for 30 days after sodding.

FINAL INSPECTION FOR ACCEPTANCE

GENERAL REQUIREMENTS:

Contractor shall notify Owner and Landscape Architect upon completion of construction. Contractor shall request final inspection prior to acceptance of work. Inspection of work to determine its final acceptance will be made by the Parkway Commission Landscape Architect at the conclusion of the guarantee period. No plants will be accepted unless they are alive and healthy and all related work conforms to the drawings and specifications.

Should any portion of the work be unacceptable, Contractor shall make all work acceptable and request a reinspection by Owner and Landscape Architect.

Contractor will be notified by letter of acceptance within five (5) days after reinspection should the latter be necessary.

**STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS**

MEASUREMENT AND PAYMENT

Measurement of specified items will be as follows:

Tree Removal will be measured per each tree removed.

Tree Trimming will not be measured and will include all trees within the construction limits.

Root Pruning will be measured per each tree pruned completely.

Root Trenching will be measured per linear foot of trench.

Restoration of Existing Plant and Flower Beds will be not measured and will include all existing plants and flower beds disturbed during the production of the work.

Payment will be made at the contract unit price under:

Item S-301, Tree Removal (Up to 10.0" DBH), per Each.

Item S-302 Tree Removal (10.1"DBH to 20.0" DBH), per Each.

Item S-303, Tree Trimming, per Lump Sum.

Item S-304, Root Pruning, per Each.

Item S-305, Root Trenching, per Linear Foot.

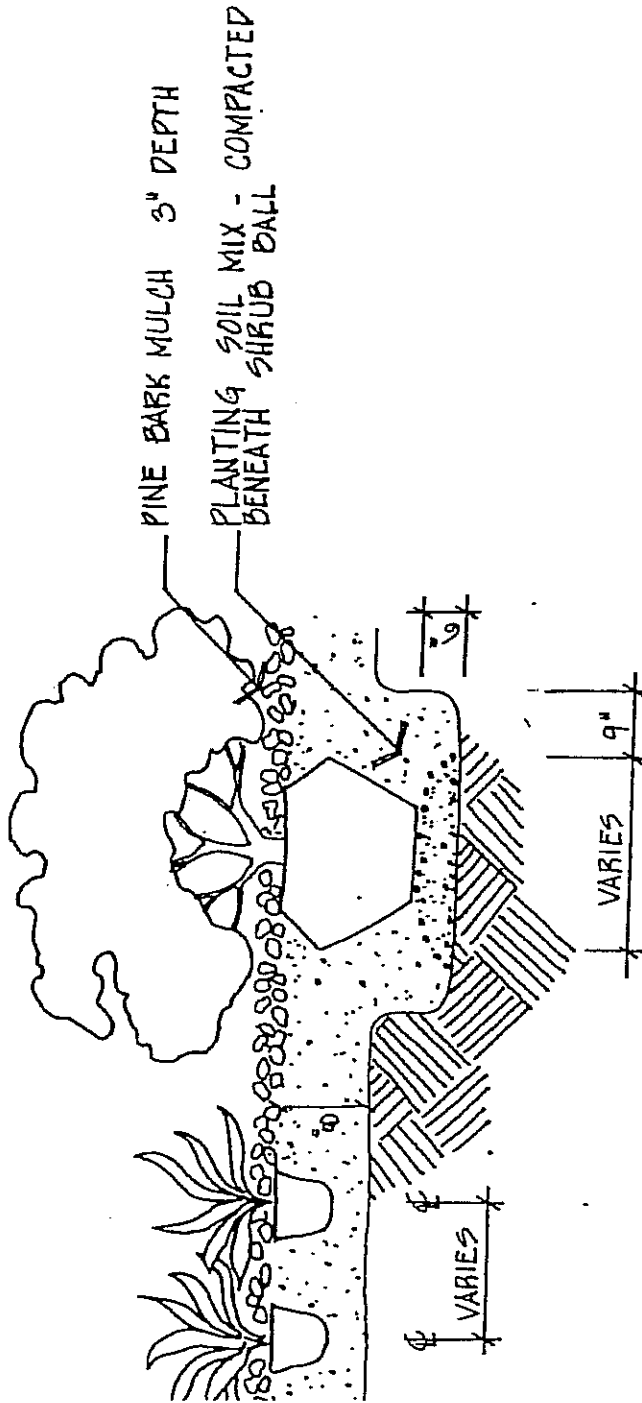
Item S-306, Restoration of Existing Plant and Flower Beds, per Lump Sum.

46



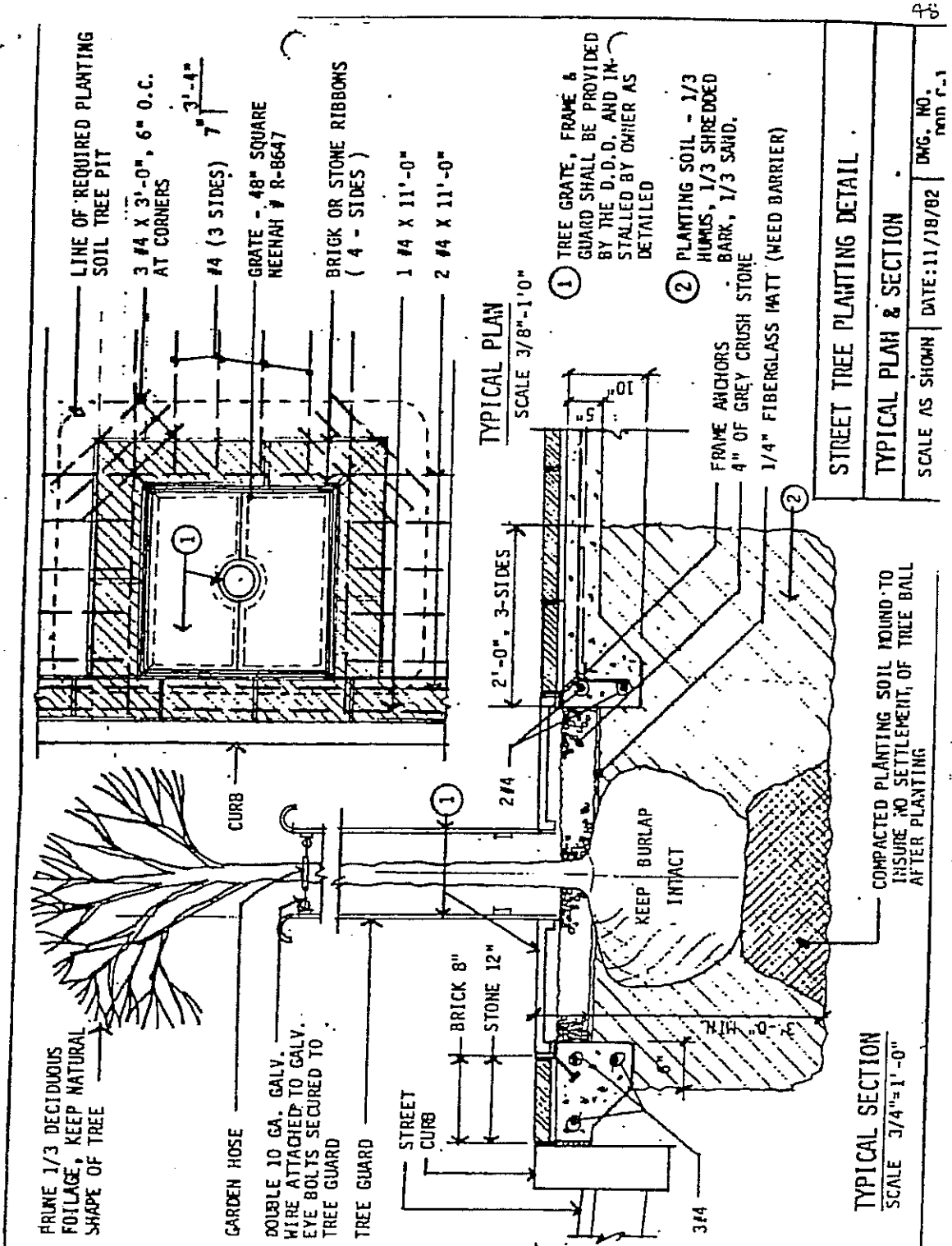
QUANTITY :	BOTANICAL NAME :	SIZE :	DESCRIPTION :
35-BASE 5-ALT. *1	SABAL PALMETTO	10-12 FT. CLEAR TRUNK HEIGHT.	STRAIGHT, OF UNI- FORM DIAMETER FROM BASE TO HEAD, FREE FROM TRUNK WOUNDS AND BURN MARKS

PLANTING SCHEDULE



Ground Cover - Shrub Planting Detail
Section N.T.S.

47



TYPICAL PLAN
SCALE 3/8" = 1'-0"

TYPICAL SECTION
SCALE 3/4" = 1'-0"

COMPONENTS AND MATERIALS:

- PRUNE 1/3 DECIDUOUS FOLIAGE, KEEP NATURAL SHAPE OF TREE
- GARDEN HOSE
- DOUBLE 10 GA. GALV. WIRE ATTACHED TO GALV. EYE BOLTS SECURED TO TREE GUARD
- TREE GUARD
- STREET CURB
- BRICK 8"
- STONE 12"
- 3/4" (3 SIDES)
- 1/4" (3 SIDES)
- GRATE - 48" SQUARE NEENAH # R-8647
- BRICK OR STONE RIBBONS (4 - SIDES)
- 1 #4 X 11'-0"
- 2 #4 X 11'-0"
- 1 TREE GRATE, FRAME & GUARD SHALL BE PROVIDED BY THE D.D.O. AND INSTALLED BY OTHER AS DETAILED
- PLANTING SOIL - 1/3 HUMUS, 1/3 SHREDDED BARK, 1/3 SARD.
- FRAME ANCHORS 4" OF GREY CRUSH STONE
- 1/4" FIBERGLASS MATT (WEED BARRIER)
- COMPACTED PLANTING SOIL, POUND TO INSURE NO SETTLEMENT, OF TREE BALL AFTER PLANTING

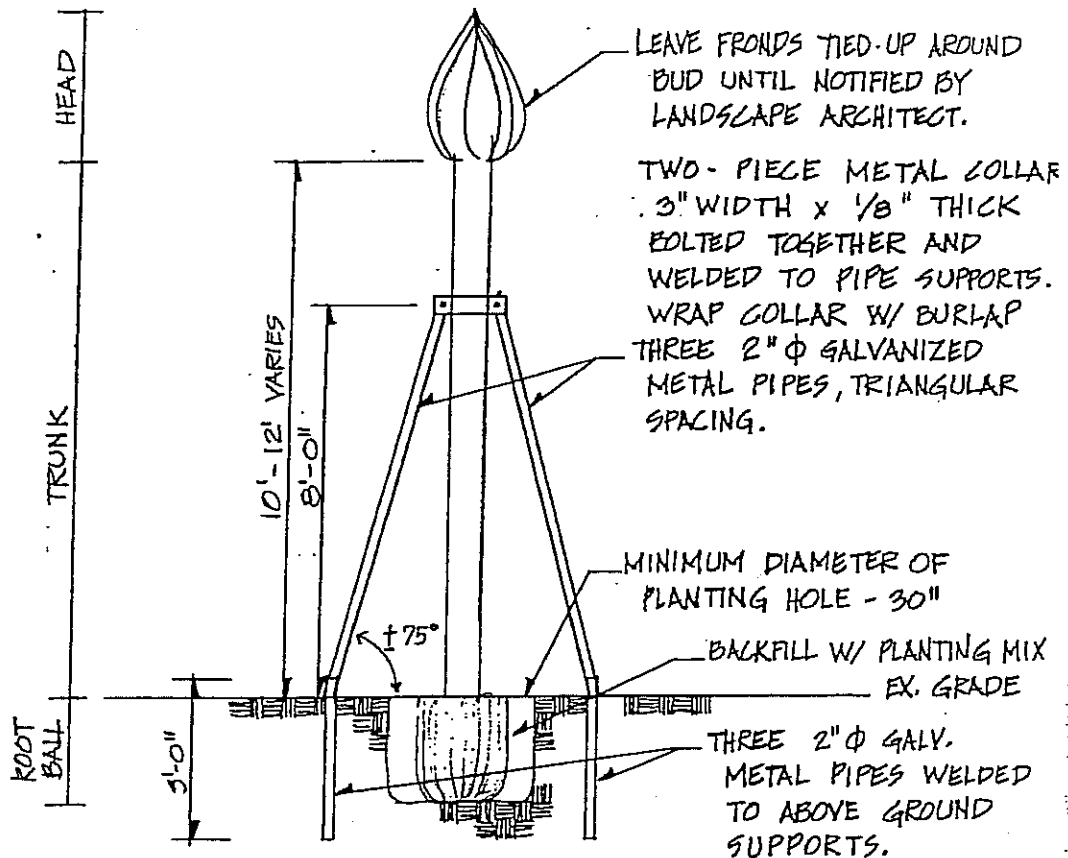
STREET TREE PLANTING DETAIL

TYPICAL PLAN & SECTION

SCALE AS SHOWN DATE: 11/18/82 DWG. NO. 1000 C-1

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

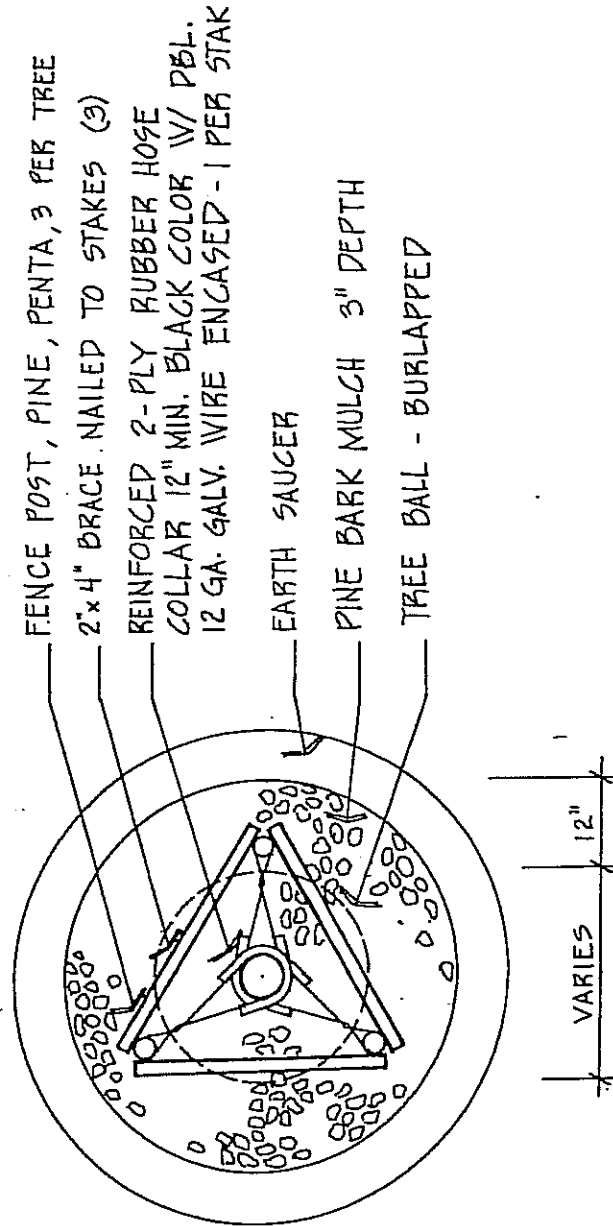
5c



PALM PLANTING & STAKING DETAIL

QUANTITY:	BOTANICAL NAME:	SIZE:	DESCRIPTION:
35-BASE 5-ALT. *1	SABAL PALMETTO	10-12 FT. CLEAR TRUNK HEIGHT.	STRAIGHT, OF UNI- FORM DIAMETER FROM BASE TO HEAD, FREE FROM TRUNK WOUNDS AND BURN MARKS

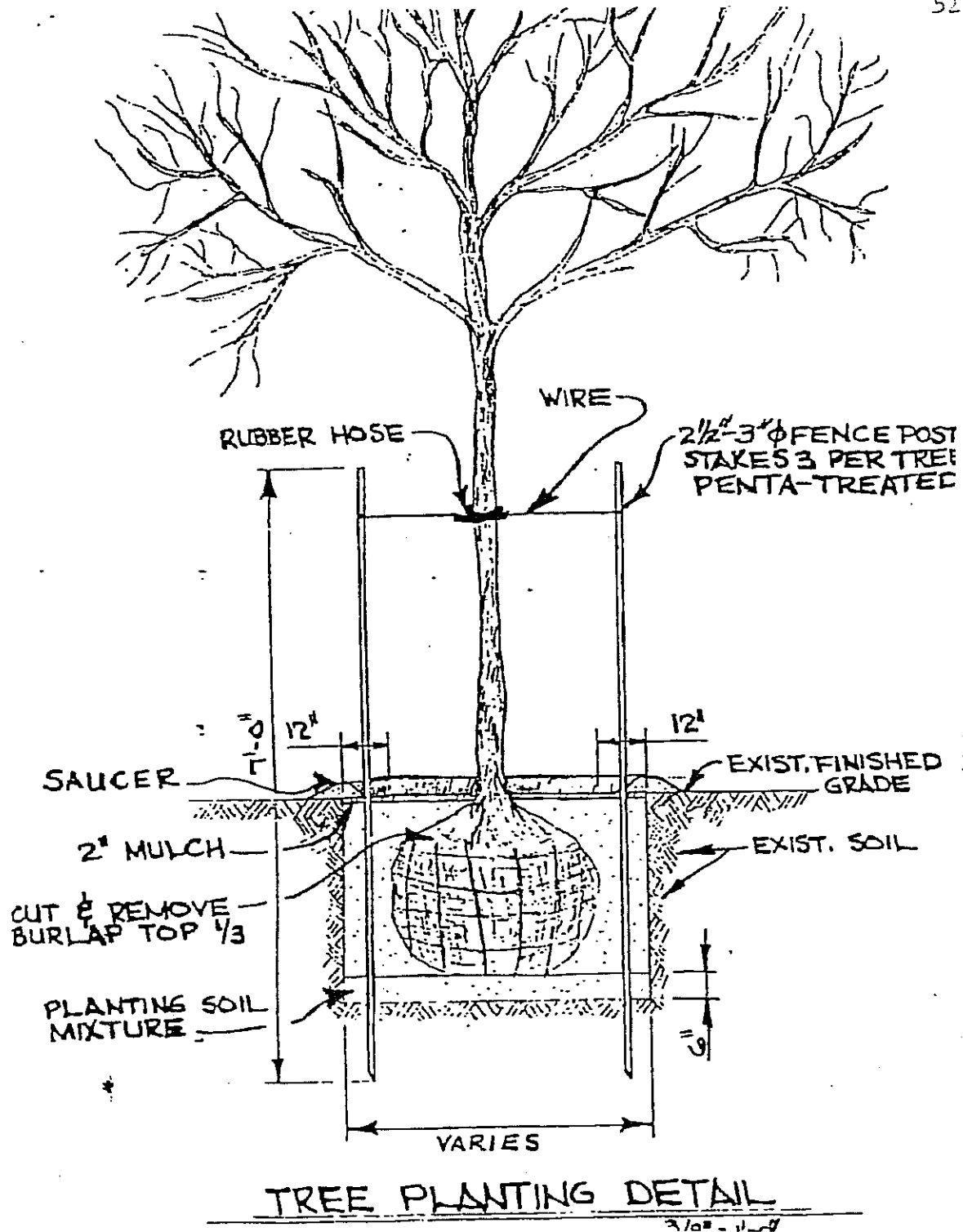
PLANTING SCHEDULE

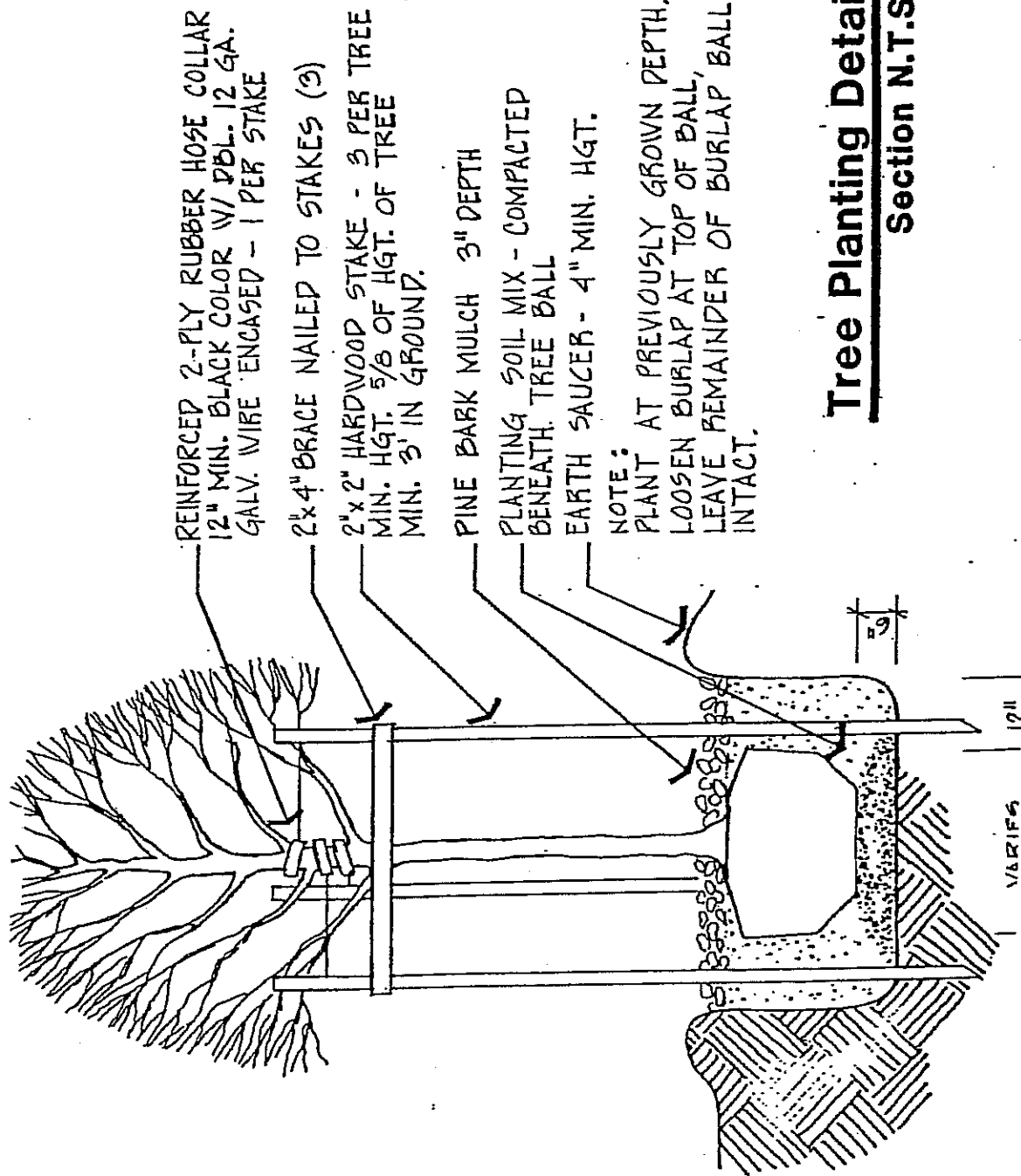


Tree Planting Detail Plan N.T.S.

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

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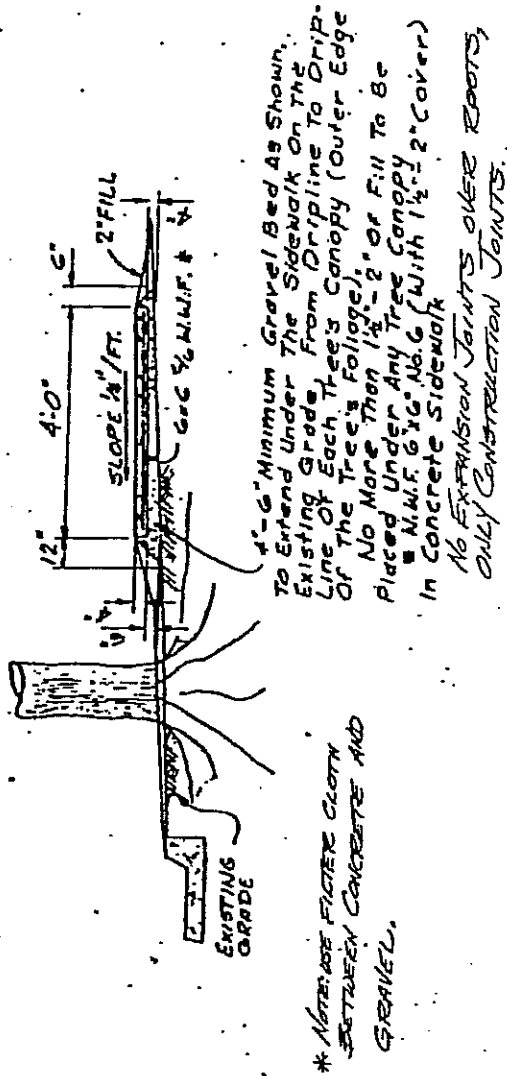


Tree Planting Detail Section N.T.S.

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STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

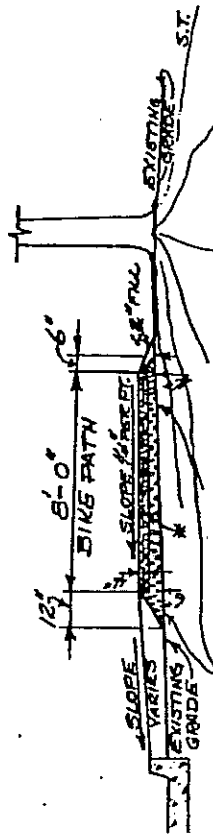
54



SIDEWALK GRAVEL BED
REQ'D. AT EACH TREE LOCATION

5!

* NOTE:
USE FILTER CLOTH
BETWEEN CONCRETE
AND GRAVEL.
NO EXPANSION JOINTS
OVER ROOTS, ONLY CONTRACTION
JOINTS
CONCRETE BIKE PATH.

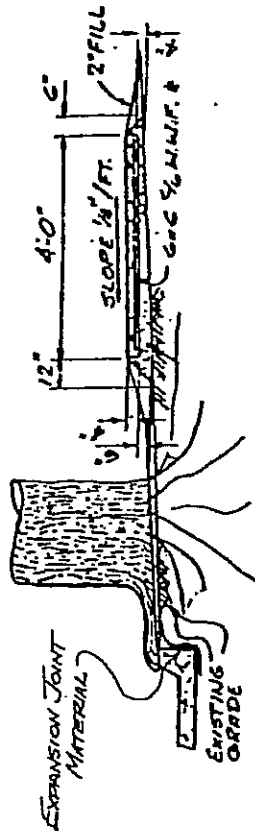


4'-6" MINIMUM GRAVEL BED AS SHOWN,
TO EXTEND AROUND THE BIKE PATH ON THE EXISTING
GRADE, FROM DRIZING TO DROPLINE OF EACH TREE'S
CANOPY, OUTER EDGE OF THE TREE'S FOLIAGE).
NO MORE THAN 1/8" - 2" OF FILL TO BE PLACED UNDER
ANY TREE CANOPY. #W.F. 6X6 - 12' X 12' X 1/4" IN.

BIKE PATH GRAVEL BED
REQ'D. AT EACH TREE LOCATION
N.T.S.

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

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General Note: The contractor is responsible for hiring a licensed arborist to prune tree roots on city trees. Projects will require on site inspection by the Parkway Commission and the arborist to determine the extent of root pruning that will be required or allowed.

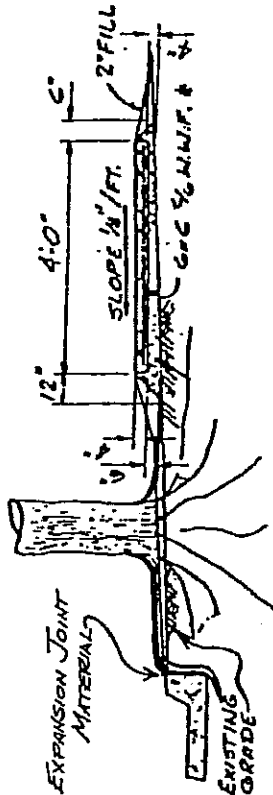
Typical Diagram #2: For trees that have tree roots growing over the curb the following options may be possible:
A) Leave the existing curb in place under the drip line of the tree and tie into new curb.
B) Remove existing curb by hand and form new curb by hand around tree roots without root pruning.
C) Remove existing curb by hand, prune tree roots as marked by the Parkway Commission, form and pour new curb.

TREE ROOTS GROWN OVER CURB

TYPICAL #2 NYS

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

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General Note: The contractor is responsible for hiring a licensed arborist to prune tree roots on city trees. Projects will require on site inspection by the Parkway Commission and the arborist to determine the extent of root pruning that will be required or allowed.

Typical Diagram #1: For trees that have roots abutting the curb or roots extending into the proposed curb the contractor should remove the curb only and not disturb tree roots behind the curb until it is determined how much of the roots can be pruned. Once marked the roots can be pruned by a licensed arborist.

TREE ROOTS GROWING BEHIND EXISTING OR NEW CURBS

TYPICAL #1 NTS

**STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS**

ENVIRONMENTAL PROTECTION

DESCRIPTION

The work required by this Section shall consist of constructing and maintaining temporary erosion control features that satisfy the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) and the National Pollution Discharge Elimination System (NPDES) General Permit. The SWPPP shall be comprised of Section 204 of the Louisiana Standard Specifications for Roads and Bridges, 2006 Edition, and latest revisions, or as amended herein. In addition, the Contractor shall obtain and maintain a LPDES Notice of Intent (NOI) to Discharge Stormwater Associated with Construction Activity Greater than 5 Acres for the life of the project.

GENERAL

The Contractor certifies under penalty of law that he understands and will abide by the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) and the National Pollution Discharge Elimination System (NPDES) program that require the discharges from construction sites to be managed to prevent pollutants from entering water of the United States in accordance with the Environmental Protection Agency's (EPA) regulations for storm water discharges.

Temporary erosion control will ensure economical, effective and continuous control of erosion and water pollution throughout the life of the contract. The Contractor shall prevent the transmission of soil particles and pollutants into active drainage systems, streams, canals, lakes, reservoirs or other waterways. In addition, the Contractor shall note that work may be simultaneously in progress on adjacent sites, and the Contractor shall be responsible for coordinating his SWPPP with the SWPPP for adjacent sites.

The Contractor will submit an erosion control plan to the Owner before beginning clearing or earthwork operations. The plan shall indicate the items to be used and the coordination of this work with the scheduling of clearing and earthwork.

At a minimum, the Contractor shall use temporary silt fencing along the property line and temporary hay bales at catch basins and manhole excavations. Pay items have been provided for these measures.

PERMIT

The Contractor will be responsible for devising a satisfactory SWPPP for the project prior to applying for the Storm Water General Permit for Construction Activities. The NOTICE OF INTENT (NOI) TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY application must be completed by the Contractor,

STATE PROJECT NO. 742-36-0008
F.A.P. NO. 6033(009)
TECHNICAL SPECIFICATIONS

approved by the Project Engineer, and submitted by the Contractor at least two days prior to the initiation of construction. The application will be sent to:

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Environmental Services
Attn: Permits Division
Post Office Box 4318
Baton Rouge, Louisiana 70821-4313

All implementation duties to comply with the SWPPP and maintain the Storm Water General Permit will be the responsibility of the Contractor.

The Contractor will be required to submit a Notice of Termination (NOT) to the Louisiana Department of Environmental Quality upon acceptance of the project by the Department.

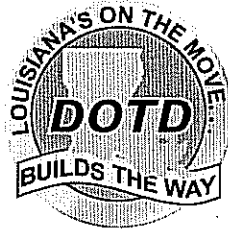
MATERIALS

The Contractor shall provide all labor, equipment and materials necessary to complete all work associate with this item.

MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for obtaining and maintaining the necessary permits; design of the Storm Water Pollution Prevention Plan (SWPPP) and all labor, equipment or materials required for the implementation of the SWPPP, except for the installation and maintenance of Temporary Silt Fences and Temporary Hay Bales. The Measurement and Payment of Temporary Silt Fence and Temporary Hay Bales shall be according to Section 204, Temporary Erosion Control. All other costs associated with this section shall be included in the Lump Sum Price for Mobilization (Pay Item 727-01).

**STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND
DEVELOPMENT**



**CONSTRUCTION PROPOSAL
INFORMATION
FOR**

FEDERAL AID PROJECT

**STATE PROJECT NO. 742-36-0008
EARHART BOULEVARD (SEGMENT I)
(HAMILTON ST. TO PINE ST.)
ORLEANS PARISH**

**CONTRACT TIME FORM
COST-PLUS-TIME BIDDING PROCEDURE
(A + B) METHOD**

STATE PROJECT NO.	<u>742-36-0008</u>
FEDERAL AID PROJECT NO.	<u>ARR-6033(009)</u>
NAME OF PROJECT	<u>EARHART BOULEVARD (SEGMENT I) (HAMILTON ST. TO PINE ST.)</u>
ROUTE	<u>N/A</u>
PARISH	<u>ORLEANS</u>

CONTRACT TIME

The bidder shall determine the number of calendar days required for completion and final acceptance of the project and shall state this required time, in words, in the space provided below. The maximum allowable contract time for this project is **Five Hundred (500) calendar days**. The proposed completion time will be a factor used in considering bids for award of contract in accordance with the special provision, COST-PLUS-TIME BIDDING PROCEDURE (A+B METHOD). The stated number of calendar days required for completion will be the contract time for this project should the bidder be successful. Bids not including a contract time, or showing contract time in excess of the maximum allowable amount, will be considered irregular and will be rejected.

CONTRACT TIME (Calendar Days To Completion, In Words)
<hr/> _____Calendar Days

BID BOND

A Bid Bond is required when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than \$50,000. *(See Section 102 of the Project Specifications)*

_____, as Principal (Bidder)
and _____, as
Surety, are bound unto, **City of New Orleans**, (hereinafter called the Contracting Agency) in the sum of
five percent (5 %) of the bidder's total bid amount as calculated by the Department for payment, of which
the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, as
solidary obligors.

Signed and sealed this _____ day of _____, 20_____.

The condition of this obligation is such that, whereas the Principal has submitted a bid to the
Contracting Agency on a contract for the construction of **STATE PROJECT NO. 742-36-0008,
FEDERAL AID PROJECT NO. ARR-6033(009), EARHART BOULEVARD (SEGMENT
I) (HAMILTON ST. TO PINE ST.), located in ORLEANS PARISH**, if the bid is accepted and
the Principal, within the specified time, enters into the contract in writing and gives bond with Surety
acceptable to the Contracting Agency for payment and performance of said contract, this obligation shall
be void; otherwise to remain in effect.

Principal (Bidder or First Partner to Joint Venture)
By _____

Authorized Officer-Owner-Partner

Typed or Printed Name

If a Joint Venture, Second Partner
By _____

Authorized Officer-Owner-Partner

Typed or Printed Name

Surety
By _____ (Seal)
Agent or Attorney-in-Fact

Typed or Printed Name

To receive a copy of the contract and subsequent correspondence / communication from LA DOTD or the
contracting agency, with respect to the bid bonds, the following information must be provided:

Bonding Agency or Company Name

Address

Agent or Representative

Phone Number / Fax Number

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 1
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
201-01	LUMP	LUMP SUM	CLEARING & GRUBBING _____ DOLLARS _____ CENTS
202-01	LUMP	LUMP SUM	REMOVAL OF STRUCTURES AND OBSTRUCTIONS _____ DOLLARS _____ CENTS
202-02-C	32,185	SQUARE YARD	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT _____ DOLLARS _____ CENTS
202-02-D	4,293	SQUARE YARD	REMOVAL OF CONCRETE WALKS & DRIVES _____ DOLLARS _____ CENTS
202-02-F	291.5	LINEAR FOOT	REMOVAL OF CONCRETE COMBINATION CURB & GUTTER _____ DOLLARS _____ CENTS
202-02-G	2,732.4	SQUARE YARD	REMOVAL OF SURFACING & STABILIZED BASE _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 2

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
202-02-I	LUMP	LUMP SUM	REMOVAL OF EXISTING SIGNAL EQUIPMENT DOLLARS CENTS
202-02-J	280	LINEAR FOOT	REMOVAL OF EXISTING RAILROAD CROSSINGS DOLLARS CENTS
203-01	24,456	CUBIC YARD	GENERAL EXCAVATION DOLLARS CENTS
203-03	5,126	CUBIC YARD	EMBANKMENT DOLLARS CENTS
203-08	43,557	SQUARE YARD	GEOTEXTILE FABRIC DOLLARS CENTS
204-02	332	EACH	TEMPORARY HAY OR STRAW BALES DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

DATE: 05/13/09 14:27 PAGE: 3

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
204-06	5,312	LINEAR FOOT	TEMPORARY SILT FENCING DOLLARS CENTS
302-02-G	38,910.0	SQUARE YARD	CLASS II BASE COURSE (9" THICK STONE OR RECYCLED P.C.C.) DOLLARS CENTS
402-01	500.0	CUBIC YARD	TRAFFIC MAINTENANCE AGGREGATE (VEHICULAR MEASUREMENT) DOLLARS CENTS
502-01-A	687.0	TON	SUPERPAVE ASPHALTIC CONCRETE, DRIVES, TURNOUTS AND MISCELLANEOUS DOLLARS CENTS
601-01-I	31,265.1	SQUARE YARD	PORTLAND CEMENT CONCRETE PAVEMENT (9" THICK) DOLLARS CENTS
601-02-I	5,368.5	SQUARE YARD	PORTLAND CEMENT CONCRETE PAVEMENT (9" THICK) (CROSSOVERS & TURNOUTS) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 4

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
602-05-I-03	320.0	SQUARE YARD	FULL DEPTH PATCHING OF JOINTED CONC PWMT (9" THICK) (48.1 SQ YDS & OVER) _____ DOLLARS _____ CENTS
701-03-F	4,770	LINEAR FOOT	STORM DRAIN PIPE (15" RCP) _____ DOLLARS _____ CENTS
701-03-G	1,181	LINEAR FOOT	STORM DRAIN PIPE (18" RCP) _____ DOLLARS _____ CENTS
701-03-I	1,150	LINEAR FOOT	STORM DRAIN PIPE (24" RCP) _____ DOLLARS _____ CENTS
701-03-K	844	LINEAR FOOT	STORM DRAIN PIPE (30" RCP) _____ DOLLARS _____ CENTS
701-03-M	333	LINEAR FOOT	STORM DRAIN PIPE (36" RCP) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
701-09-A	26	EACH	FABRICATING PIPE FITTINGS (15"x15"x15") _____ DOLLARS _____ CENTS
701-09-B	6	EACH	FABRICATING PIPE FITTINGS (18"x18"x15") _____ DOLLARS _____ CENTS
701-09-C	5	EACH	FABRICATING PIPE FITTINGS (24"x24"x15") _____ DOLLARS _____ CENTS
701-09-D	3	EACH	FABRICATING PIPE FITTINGS (30"x30"x15") _____ DOLLARS _____ CENTS
701-09-E	1	EACH	FABRICATING PIPE FITTINGS (36"x36"x15") _____ DOLLARS _____ CENTS
701-09-F	5	EACH	FABRICATING PIPE FITTINGS (18"x18"x18") _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 6

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
702-02-G-01	54	EACH	MANHOLES (D-870) (STANDARD NO. 1) DOLLARS CENTS
702-02-G-02	6	EACH	MANHOLES (D-870) (STANDARD NO. 2) DOLLARS CENTS
702-02-G-03	2	EACH	MANHOLES (D-870) (STANDARD NO. 3) DOLLARS CENTS
702-02-H	1	EACH	MANHOLES (617B-B6) (SEWER MANHOLE) DOLLARS CENTS
702-02-I	7	EACH	MANHOLES (6179-F-2) (WATER VALVE MANHOLE) DOLLARS CENTS
702-03-H	1	EACH	CATCH BASINS (CB-05) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 7

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
702-03-I	52	EACH	CATCH BASINS (D-873) (VERTICAL CATCH BASIN NO.1) _____ DOLLARS _____ CENTS
702-03-J	15	EACH	CATCH BASINS (D-873-A) (DOUBLE VERTICAL CATCH BASIN) _____ DOLLARS _____ CENTS
702-03-K	5	EACH	CATCH BASINS (D-3431-A) (SINGLE DRIVE-OVER CATCH BASIN) _____ DOLLARS _____ CENTS
702-03-L	9	EACH	CATCH BASINS (D-3264) (DROP INLET CATCH BASIN) _____ DOLLARS _____ CENTS
702-03-M	2	EACH	CATCH BASINS (D-3431-B) (DOUBLE DRIVE-OVER CATCH BASIN) _____ DOLLARS _____ CENTS
702-04-A	11	EACH	ADJUSTING MANHOLES _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 8

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
702-04-B	5	EACH	ADJUSTING CATCH BASINS _____ DOLLARS _____ CENTS
705-09	146	LINEAR FOOT	REBUILT FENCE _____ DOLLARS _____ CENTS
706-01-A	5,051.2	SQUARE YARD	CONCRETE WALK (4" THICK) _____ DOLLARS _____ CENTS
706-01-C	920.8	SQUARE YARD	CONCRETE WALK (6" THICK) _____ DOLLARS _____ CENTS
706-02-C	1,730.7	SQUARE YARD	CONCRETE DRIVE (6" THICK) _____ DOLLARS _____ CENTS
706-03-A	304.9	SQUARE YARD	INCIDENTAL CONCRETE PAVING (4" THICK) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

DATE: 05/13/09 14:27 PAGE: 9

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
707-01	13,505.5	LINEAR FOOT	CONCRETE CURB _____ DOLLARS _____ CENTS
707-03	961.4	LINEAR FOOT	COMBINATION CONCRETE CURB & GUTTER _____ DOLLARS _____ CENTS
713-01	LUMP	LUMP SUM	TEMPORARY SIGNS & BARRICADES _____ DOLLARS _____ CENTS
713-03-B	2.300	MILE	TEMPORARY PAVEMENT MARKINGS (BROKEN LINE) (4" WIDTH) (10' LENGTH) _____ DOLLARS _____ CENTS
713-04-A-01	3.100	MILE	TEMPORARY PAVEMENT MARKINGS (SOLID LINE) (4" WIDTH) (TYPE 1 REMOVABLE) _____ DOLLARS _____ CENTS
713-05-A	4	EACH	TEMPORARY PAVEMENT LEGENDS AND SYMBOLS (ARROW) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
713-08	380	EACH	TEMPORARY PRECAST BARRIER (DOTD FURNISHED) _____ DOLLARS _____ CENTS
713-10	760	EACH	TEMPORARY PORTABLE BARRIER MOVEMENT _____ DOLLARS _____ CENTS
715-01	1,012	CUBIC YARD	TOPSOIL _____ DOLLARS _____ CENTS
717-01	60	POUND	SEEDING _____ DOLLARS _____ CENTS
718-01	2,000	POUND	FERTILIZER _____ DOLLARS _____ CENTS
722-02	1	EACH	PROJECT SITE LABORATORY (EQUIPPED) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 11
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
725-01	925.0	SQUARE YARD	TEMPORARY DETOUR ROADS _____ DOLLARS _____ CENTS
726-01	1,038.2	CUBIC YARD	BEDDING MATERIAL _____ DOLLARS _____ CENTS
727-01	LUMP	LUMP SUM	MOBILIZATION _____ DOLLARS _____ CENTS
729-01	260.0	SQUARE FOOT	SIGN (TYPE A) _____ DOLLARS _____ CENTS
731-02	424	EACH	REFLECTORIZED RAISED PAVEMENT MARKERS _____ DOLLARS _____ CENTS
732-01-B	6,490	LINEAR FOOT	PLASTIC PAVEMENT STRIPING (6" WIDTH) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
732-01-C	2,072	LINEAR FOOT	PLASTIC PAVEMENT STRIPING (8" WIDTH) DOLLARS CENTS
732-01-E	897	LINEAR FOOT	PLASTIC PAVEMENT STRIPING (24" WIDTH) DOLLARS CENTS
732-02-A	3.100	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (4" WIDTH) DOLLARS CENTS
732-03-A-01	2.300	MILE	PLASTIC PAVEMENT STRIPING (BROKEN LINE) (4"WIDTH) PREFORMED MARKING TAPE TYPE V DOLLARS CENTS
732-04-A	18	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (ARROW) DOLLARS CENTS
732-04-B	2	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (DOUBLE ARROW) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 13
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
732-04-C	6	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (ONLY) _____ DOLLARS _____ CENTS
732-04-E	1	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (SCHOOL CROSSING) _____ DOLLARS _____ CENTS
732-05	1.100	MILE	REMOVAL OF EXISTING MARKINGS _____ DOLLARS _____ CENTS
740-01	LUMP	LUMP SUM	CONSTRUCTION LAYOUT _____ DOLLARS _____ CENTS
741-01-C	688	LINEAR FOOT	WATER MAIN (8" PVC) _____ DOLLARS _____ CENTS
741-02-C	5	EACH	GATE VALVE (8") _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 14
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
741-04	5	EACH	FIRE HYDRANT DOLLARS CENTS
741-09	20	EACH	ADJUSTING WATER HOUSE CONNECTIONS DOLLARS CENTS
742-02	20	EACH	ADJUSTING SANITARY SEWER HOUSE CONNECTIONS DOLLARS CENTS
812-01-B	82.96	MFEM	TREATED TIMBER (COASTAL TREATMENT) DOLLARS CENTS
S-001	38,910	SQUARE YARD	GEOGRID DOLLARS CENTS
S-002	10	EACH	TEMPORARY CONSTRUCTION ENTRANCE DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 15
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-102	10,840	LINEAR FOOT	SAW CUTTING (inch/foot) DOLLARS CENTS
S-103	160.0	SQUARE YARD	REINFORCED CONCRETE BUS PAD (9" THICK, 4000 PSI) (12'X 60') DOLLARS CENTS
S-104	36	EACH	RELOCATE LIGHT STANDARD DOLLARS CENTS
S-105	50.0	EACH	EXPLORATION AND LOCATION OF ALL EXISTING UTILITIES DOLLARS CENTS
S-106	3	EACH	REMOVE AND SALVAGE LIGHT STANDARDS DOLLARS CENTS
S-107	2,500	LINEAR FOOT	STREET LIGHT CABLE IN CONDUIT DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-108	10	EACH	EMERGENCY ELECTRICAL SPLICES _____ DOLLARS _____ CENTS
S-120	8	EACH	SIGNAL SUPPORT (PEDESTAL, MOUNTED) _____ DOLLARS _____ CENTS
S-121	2	EACH	SIGNAL SUPPORT (25' SINGLE MAST ARM) _____ DOLLARS _____ CENTS
S-122	2	EACH	SIGNAL SUPPORT (30' SINGLE MAST ARM) _____ DOLLARS _____ CENTS
S-123	8	EACH	SIGNAL SUPPORT (35' SINGLE MAST ARM) _____ DOLLARS _____ CENTS
S-124	3	EACH	SIGNAL SUPPORT (40' SINGLE MAST ARM) _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 17
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-125	4	EACH	SIGNAL SUPPORT (45' SINGLE MAST ARM) DOLLARS CENTS
S-126-A	41	EACH	SIGNAL HEAD - HORIZONTAL, (3-SECTION, R Y G), (12" LED LENS) DOLLARS CENTS
S-126-B	30	EACH	SIGNAL HEAD - VERTICAL, (3-SECTION R Y G), (12" LED LENS) DOLLARS CENTS
S-126-C	2	EACH	SIGNAL HEAD - VERTICAL, (3-SECTION R YLT GLT), (12" LED LENS) DOLLARS CENTS
S-126-D	3	EACH	SIGNAL HEAD - HORIZONTAL, (3-SECTION R YRT GRT), (12" LED LENS) DOLLARS CENTS
S-127	3	EACH	SIGNAL CONTROLLER - (NEMA TS-2, TYPE 6 BASE MOUNTED CABINET) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-128	8,838	LINEAR FOOT	CONDUCTOR 7C (SINGLE, #14 AWG STRANDED) TRAFFIC SIGNAL CABLE DOLLARS CENTS
S-129	1,394	LINEAR FOOT	JACK OR BORED CONDUIT DOLLARS CENTS
S-130	3	EACH	SIGNAL SERVICE (PEDESTAL MOUNT) DOLLARS CENTS
S-131	37	LINEAR FOOT	CONDUIT 1" PVC IN EARTH DOLLARS CENTS
S-132	4,600	LINEAR FOOT	CONDUIT 2" PVC IN EARTH DOLLARS CENTS
S-133	20	LINEAR FOOT	CONDUIT 3" PVC IN EARTH DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 19
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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-134	724	LINEAR FOOT	CONDUIT 3" PVC JACK AND BORE DOLLARS CENTS
S-135	106	LINEAR FOOT	CONDUIT 4" PVC IN EARTH DOLLARS CENTS
S-136	50	LINEAR FOOT	CONDUIT 1" (RIGID) DOLLARS CENTS
S-137	23	EACH	UNDERGROUND JUNCTION BOX (TYPE D) DOLLARS CENTS
S-138	16	EACH	UNDERGROUND JUNCTION BOX (TYPE F) DOLLARS CENTS
S-139	3	EACH	TRAFFIC MANHOLE DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

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LEAD PROJECT: 742-36-0008
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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-140	628	LINEAR FOOT	LOOP DETECTORS (SAW LOOP SLOT IN PAVEMENT) DOLLARS CENTS
S-141	6,200	LINEAR FOOT	CABLE LOOP LEAD IN DOLLARS CENTS
S-142	5	EACH	OPTICAL EMITTER DOLLARS CENTS
S-143	1,184	LINEAR FOOT	CONDUCTOR, 3C (SIGNAL, #14 AWG STRANDED) OPTICAL DETECTOR CABLE DOLLARS CENTS
S-144	8	EACH	UNI-DIRECTIONAL OPTICAL DETECTORS DOLLARS CENTS
S-146	3,753	LINEAR FOOT	CONDUCTOR, 1-6PR INTERCONNECT CABLE DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-148	30	EACH	STREET NAME SIGNS (ON NEW POST) DOLLARS CENTS
S-149	7,276	LINEAR FOOT	CONDUCTOR, 2C/OS (LOOP LEAD-IN, #14 AWG STRANDED) LOOP WIRE DOLLARS CENTS
S-150	8	EACH	IMPACT ATTENUATOR DOLLARS CENTS
S-151	100	HOURL	POLICE TRAFFIC CONTROL DOLLARS CENTS
S-152	400	LINEAR FOOT	CONDUIT 2" PVC JACK AND BORE DOLLARS CENTS
S-153	316	LINEAR FOOT	CONDUIT 4" PVC JACK AND BORE DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 22
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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-154	4,750	LINEAR FOOT	TRENCHING AND BACKFILLING DOLLARS CENTS
S-155	40	SQUARE FOOT	SIGNS (R3-1) DOLLARS CENTS
S-156	4	SQUARE FOOT	SIGNS (R3-2) DOLLARS CENTS
S-157	4	SQUARE FOOT	SIGNS (R3-5R) DOLLARS CENTS
S-158	6.3	SQUARE FOOT	SIGNS (R3-7R) DOLLARS CENTS
S-159	12.5	SQUARE FOOT	SIGNS (R5-1) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

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LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-160	8	SQUARE FOOT	SIGNS (R10-10) DOLLARS CENTS
S-161	42	SQUARE FOOT	SIGNS (SPECIAL, YIELD TO PEDESTRIAN) DOLLARS CENTS
S-162	87.5	SQUARE FOOT	SIGNS (SPECIAL, STREET NAME) DOLLARS CENTS
S-163	31	LINEAR FOOT	CONDUCTOR, 3C (POWER, #6 AWG) DOLLARS CENTS
S-201	LUMP	LUMP SUM	SEWERAGE AND WATER BOARD ELECTRICAL DUCTBANK AND MANHOLES, COMPLETE DOLLARS CENTS
S-202	14	EACH	DRAIN HOUSE CONNECTION FROM NEW DRAIN LINE TO BACK OF CURB (6" PVC) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008
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ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-203	200	LINEAR FOOT	DRAIN HOUSE CONNECTION BEYOND BACK OF CURB (6" PVC) DOLLARS CENTS
S-204	300	LINEAR FOOT	COLLECTOR LINE TO CATCH BASIN FOR DRAIN HOUSE CONNECTIONS (8" PVC) DOLLARS CENTS
S-205	4	EACH	ADJUST DRAIN CLEANOUT BOX DOLLARS CENTS
S-206	4	EACH	REMOVE MUD AND DEBRIS FROM METER BOX DOLLARS CENTS
S-207	4	EACH	REPLACE BROKEN WATER METER BOX DOLLARS CENTS
S-208	4	EACH	ADJUST WATER METER BOX DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 742-36-0008 DATE: 05/13/09 14:27 PAGE: 25
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-209	25	LINEAR FOOT	SEWER POINT REPAIR UP TO TEN FEET DOLLARS CENTS
S-210	30	LINEAR FOOT	SEWER POINT REPAIR BEYOND TEN FEET DOLLARS CENTS
S-211	5	EACH	REMOVE AND REPLACE EXISTING SEWER HOUSE CONNECTION FROM NEW MAIN TO BACK OF CURB DOLLARS CENTS
S-212	75	LINEAR FOOT	REMOVE AND REPLACE SEWER HOUSE CONNECTION BEYOND BACK OF CURB DOLLARS CENTS
S-213	6	EACH	REPLACE 5/8" AND 3/4" WATER HOUSE CONNECTION (FROM MAIN TO METER) DOLLARS CENTS
S-214	2	EACH	REPLACE 1" WATER HOUSE CONNECTION (FROM MAIN TO METER) DOLLARS CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

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LEAD PROJECT: 742-36-0008
OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-215	200	LINEAR FOOT	REPLACE 3/4" OR 1" WATER HOUSE CONNECTION (FROM METER TO PROPERTY LINE) _____ DOLLARS _____ CENTS
S-216	15	EACH	PLUG EXISTING DRAINS _____ DOLLARS _____ CENTS
S-217	200	CUBIC YARD	FILL DRAIN WITH MISSISSIPPI RIVER SAND _____ DOLLARS _____ CENTS
S-301	10	EACH	TREE REMOVAL (UP TO 10.0" DBH) _____ DOLLARS _____ CENTS
S-302	4	EACH	TREE REMOVAL (10.1" DBH TO 20.0" DBH) _____ DOLLARS _____ CENTS
S-303	LUMP	LUMP SUM	TREE TRIMMING _____ DOLLARS _____ CENTS

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

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OTHER PROJECTS: 742-36-0008

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-304	4	EACH	ROOT PRUNING DOLLARS CENTS
S-305	100	LINEAR FOOT	ROOT TRENCHING DOLLARS CENTS
S-306	LUMP	LUMP SUM	RESTORATION OF EXISTING PLANT AND FLOWER BEDS DOLLARS CENTS

CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM

THIS FORM, THE SCHEDULE OF ITEMS, AND THE PROPOSAL GUARANTY MUST BE COMPLETED AS INDICATED AND SUBMITTED TO THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (DOTD) TO CONSTITUTE A VALID BID

STATE PROJECT NO.

742-36-0008

FEDERAL AID PROJECT NO.

ARR-6033(009)

NAME OF PROJECT

EARHART BOULEVARD (SEGMENT I)
(HAMILTON ST. TO PINE ST.)

I (WE) HEREBY CERTIFY THAT I (WE) HAVE CAREFULLY EXAMINED THE PROPOSAL, PLANS AND SPECIFICATIONS, INCLUDING ANY AND ALL ADDENDA, AND THE SITE OF THE ABOVE PROJECT AND AM (ARE) FULLY COGNIZANT OF ALL PROPOSAL DOCUMENTS, THE MASTER COPY OF WHICH IS ON FILE AT DOTD HEADQUARTERS IN BATON ROUGE, LA., AND ALL WORK, MATERIALS AND LABOR REQUIRED THEREIN, AND AGREE TO PERFORM ALL WORK, AND SUPPLY ALL NECESSARY MATERIALS AND LABOR REQUIRED FOR SUCCESSFUL AND TIMELY COMPLETION OF THE ABOVE PROJECT AND TO ACCEPT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS ATTACHED HERETO AND MADE A PART HEREOF MULTIPLIED BY THE ACTUAL QUANTITY OF UNIT OF MEASURE PERFORMED FOR EACH ITEM, AS AUDITED BY DOTD, AS FULL AND FINAL PAYMENT FOR ALL WORK, LABOR AND MATERIALS NECESSARY TO COMPLETE THE ABOVE PROJECT, SUBJECT TO INCREASE ONLY FOR PLAN CHANGES (CHANGE ORDERS) APPROVED BY THE DOTD CHIEF ENGINEER OR HIS DESIGNEE. THIS BID IS SUBMITTED IN ACCORDANCE WITH THE GENERAL BIDDING REQUIREMENTS IN THE CONSTRUCTION PROPOSAL AND ALL SPECIAL PROVISIONS, PLANS, SUPPLEMENTAL SPECIFICATIONS, AND THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 EDITION). I (WE) UNDERSTAND THAT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS MULTIPLIED BY THE ESTIMATED QUANTITY OF UNIT OF MEASURE FOR EACH ITEM, ALONG WITH ANY OTHER FACTORS SPECIFIED TO BE APPLICABLE SUCH AS CONSTRUCTION TIME AND/OR LANE RENTAL, SHALL BE THE BASIS FOR THE COMPARISON OF BIDS. I (WE) UNDERSTAND THAT THE SCHEDULE OF ITEMS MUST CONTAIN UNIT PRICES WRITTEN OUT IN WORDS AND THAT THE SCHEDULE OF ITEMS SUBMITTED AS PART OF THIS BID IS ON THE FORM SUPPLIED BY DOTD IN THE BID PROPOSAL. MY (OUR) PROPOSAL GUARANTY IN THE AMOUNT SPECIFIED FOR THE PROJECT IS ATTACHED HERETO AS EVIDENCE OF MY (OUR) GOOD FAITH TO BE FORFEITED IF THIS BID IS ACCEPTED BY DOTD AND I (WE) FAIL TO COMPLY WITH ANY REQUIREMENT NECESSARY FOR AWARD AND EXECUTION OF THE CONTRACT, AS WELL AS, SIGN AND DELIVER THE CONTRACT AND PAYMENT/PERFORMANCE/RETAINAGE BOND AS REQUIRED IN THE SPECIFICATIONS.

NONCOLLUSION DECLARATION (APPLICABLE TO FEDERAL-AID PROJECTS)

I (WE) DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND THE STATE OF LOUISIANA THAT I (WE) HAVE NOT DIRECTLY OR INDIRECTLY, ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THE CONTRACT FOR THIS PROJECT NOR VIOLATED LA. R.S. 48:254.

BIDDER'S DBE GOAL STATEMENT (APPLICABLE TO DBE GOAL PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A DISADVANTAGED BUSINESS ENTERPRISE (DBE) GOAL PROJECT IN ACCORDANCE WITH THE DBE PROVISIONS OF THIS CONTRACT, THE BIDDER ASSURES DOTD THAT HE/SHE WILL MEET OR EXCEED THE DBE CONTRACT GOAL, OR IF THE BIDDER CANNOT MEET THE REQUIRED DBE GOAL, THE BIDDER ASSURES DOTD THAT HE/SHE HAS MADE AND CAN DOCUMENT GOOD FAITH EFFORTS MADE TOWARDS MEETING THE GOAL REQUIREMENT IN ACCORDANCE WITH THE CONTRACT AND DBE PROGRAM MANUAL INCORPORATED HEREIN BY REFERENCE.

THE APPARENT LOW BIDDER SHALL COMPLETE AND SUBMIT TO THE DOTD COMPLIANCE PROGRAMS OFFICE, FORM CS-6AAA AND ATTACHMENT(S) AND, IF NECESSARY, DOCUMENTATION OF GOOD FAITH EFFORTS MADE BY THE BIDDER TOWARD MEETING THE GOAL, WITHIN TEN BUSINESS DAYS AFTER THE OPENING OF BIDS FOR THIS PROJECT. RESPONSIVENESS OF INFORMATION SUPPLIED IN THIS SECTION OF THIS CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM IS GOVERNED BY THE DBE REQUIREMENTS INCLUDED WITHIN THE SPECIFICATIONS AND DBE PROGRAM MANUAL.

CERTIFICATION OF EMPLOYMENT OF LOUISIANA RESIDENTS TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECTS (APPLICABLE TO TIME PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECT AS DEFINED IN ACT NO. 16 OF THE 1989 FIRST EXTRAORDINARY SESSION OF THE LEGISLATURE WHICH ENACTED PART V OF CHAPTER 7 OF SUBTITLE II OF TITLE 47 OF THE LOUISIANA REVISED STATUTES OF 1950, COMPRISED OF R.S. 47:820.1 THROUGH 820.6.

THE BIDDER CERTIFIES THAT AT LEAST 80 PERCENT OF THE EMPLOYEES EMPLOYED ON THIS TIME PROJECT WILL BE LOUISIANA RESIDENTS IN ACCORDANCE WITH LOUISIANA R.S. 47:820.3.

NON PARTICIPATION IN PAYMENT ADJUSTMENT (ASPHALT CEMENT AND FUELS) STATEMENT

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS BEING SUBJECT TO PAYMENT ADJUSTMENT FOR ASPHALT CEMENT AND/OR FUELS, THE BIDDER HAS THE OPTION OF REQUESTING EXCLUSION FROM SAID PAYMENT ADJUSTMENT PROVISIONS THAT ARE ESTABLISHED BY SPECIAL PROVISION ELSEWHERE HEREIN.

IF THE BIDDER DESIRES TO BE EXCLUDED FROM THESE PAYMENT ADJUSTMENT PROVISIONS,

THE BIDDER IS REQUIRED TO MARK HERE ☐

FAILURE TO MARK THIS BOX PRIOR TO BID OPENING WILL CONSTITUTE FORFEITURE OF THE BIDDER'S OPTION TO REQUEST EXCLUSION.

CS-14A
08/06

BIDDER SIGNATURE REQUIREMENTS (APPLICABLE TO ALL PROJECTS)

THIS BID FOR THE CAPTIONED PROJECT IS SUBMITTED BY:

(Name of Principal (Individual, Firm, Corporation, or Joint Venture))

(If Joint Venture, Name of First Partner)

(Louisiana Contractor's License Number of Bidder or First Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

(If Joint Venture, Name of Second Partner)

(Louisiana Contractor's License Number of Second Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

ACTING ON BEHALF OF THE BIDDER, THIS IS TO ATTEST THAT THE UNDERSIGNED DULY AUTHORIZED REPRESENTATIVE OF THE ABOVE CAPTIONED FIRM, CORPORATION OR BUSINESS, BY SUBMISSION OF THIS BID, AGREES AND CERTIFIES THE TRUTH AND ACCURACY OF ALL PROVISIONS OF THIS PROPOSAL, INCLUSIVE OF THE REQUIREMENTS, STATEMENTS, DECLARATIONS AND CERTIFICATIONS ABOVE AND IN THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY. EXECUTION AND SIGNATURE OF THIS FORM AND SUBMISSION OF THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY SHALL CONSTITUTE AN IRREVOCABLE AND LEGALLY BINDING OFFER BY THE BIDDER.

(Signature)

(Printed Name)

(Title)

(Date of Signature)

(Signature)

(Printed Name)

(Title)

(Date of Signature)

CONTRACTOR'S INFORMATIONAL BID

It is agreed that the total bid shown below, determined by the bidder, is for purposes of opening and reading bids only and that the low bidder for this project will be determined in accordance with the special provision entitled **COST-PLUS-TIME BIDDING PROCEDURE (A+B METHOD)**, as determined by the Department.

A = Summation of products of the quantities shown in the Schedule of Items multiplied by the unit prices.

A = _____

B = Bidders proposed contract time multiplied by the Daily User Cost (\$5000).

B = _____ Calendar Days x \$5000

B = _____

Contractor's Total Bid (A + B) _____

CS-14AA
08/06